

SONY®

DIGITAL TIME BASE CORRECTOR

BKU-901A

OPERATION AND MAINTENANCE MANUAL

1st Edition (Revised 2)

Serial No.10241 and Higher (JAPAN)

Serial No.12231 and Higher (USA CANADA)

Warning—This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Important—To insure that the complete system (including this peripheral) is capable of complying with the FCC requirements, it is recommended that the user make sure that the individual equipment of the complete system has a label with one of the following statements. "This equipment has been tested with a Class A Computing Device and has been found to comply with Part 15 of FCC Rules."

-or-

"This equipment complies with the requirements in Part 15 of FCC Rules for a Class A Computing Device."

-or equivalent.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

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第1章 取り扱い操作

1-1. 概要

BKU-901Aは、ソニーUマチックビデオカセットレコーダーBVU-950用のプラグイン型タイムベースコレクターです。

BVU-950の再生信号を、放送規格に合った信号に変換します。TBC-5基板1枚とリモートコントロールユニットBVR-55で構成されています。

幅広い補正範囲

15Hp-pのウィンドーを持ち、ジッターに対して広い補正能力を持っています。補正範囲を超えた場合でも、水平方向への動きや同期の乱れは起こりません。

8ビット/4fscサンプリング

再生信号のデジタル変換は8ビット×4fscで行いますので、帯域の劣化、量子化ノイズによるS/Nの劣化の心配がありません。

高速再生時も基準信号に同期

VTRのSHUTTLEモードでは、±5倍速まではカラー画像、±10倍速までは白黒画像で基準信号に同期させることができます。またF FWD、REWモードでも白黒画像で同期が可能です。

デジタルドロップアウトコンペンセーター内蔵

Y/C共に1H前の部分置換によりドロップアウトを補償します。信号置換処理はすべてデジタル処理のため、信号の劣化がありません。

ビートキャンセラー内蔵

VTR出力に残留する低域変換クロマサブキャリアの2次ビートを除去します。したがって、モニターの画面に斜めのノイズが出ません。

シンクジェネレーター内蔵

外部同期、内部同期のどちらも動作します。外部からの同期信号を接続すると、自動的に外部同期に切り替わります。内蔵のシンクジェネレーターが発生する同期信号は、BVU-950のREF VIDEO OUT端子から出力され、BVU-950に接続した機器の基準信号として使うこともできます。

垂直ブランキングの選択可能

垂直ブランキング期間の10～21ラインの任意のラインをブランキングすることができます。

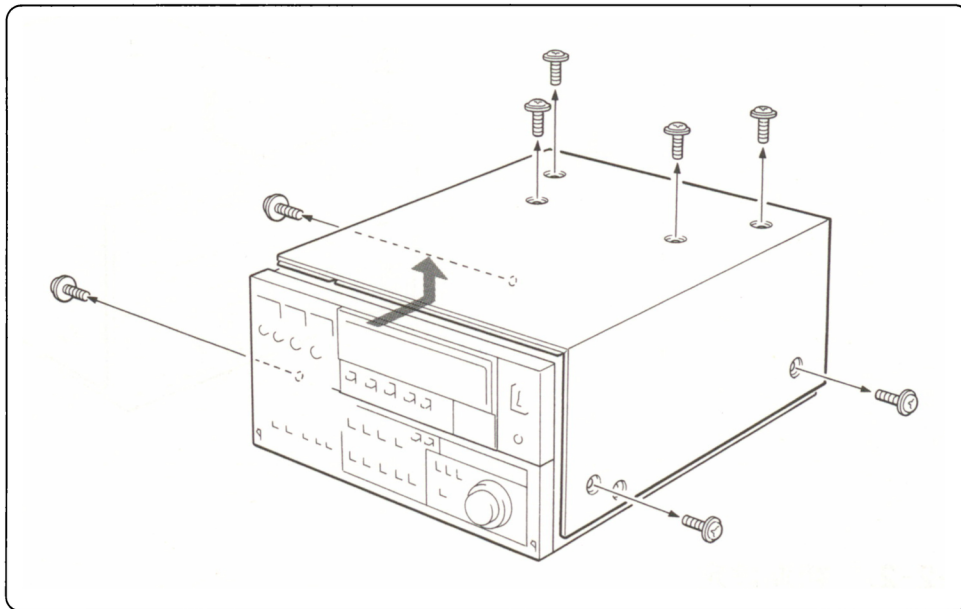
プロセス回路内蔵

プロセス回路を内蔵していますので、リモートコントロールユニットBVR-55により、ビデオレベル、クロマレベル、セットアップレベル、ヒュー、シンク位相、サブキャリア位相を調整することができます。

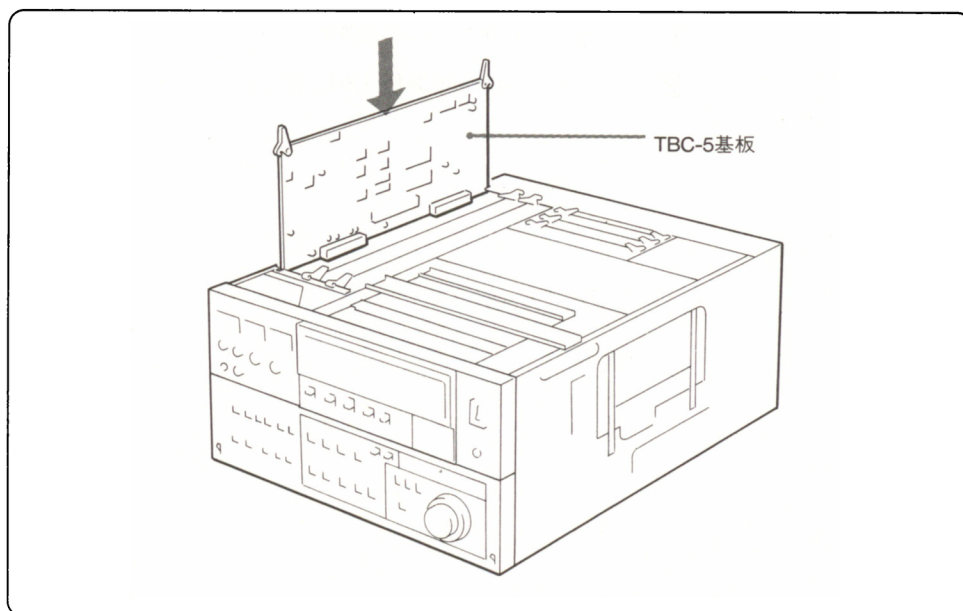
1-2. 取り付け

1-2-1. TBC基板の装着

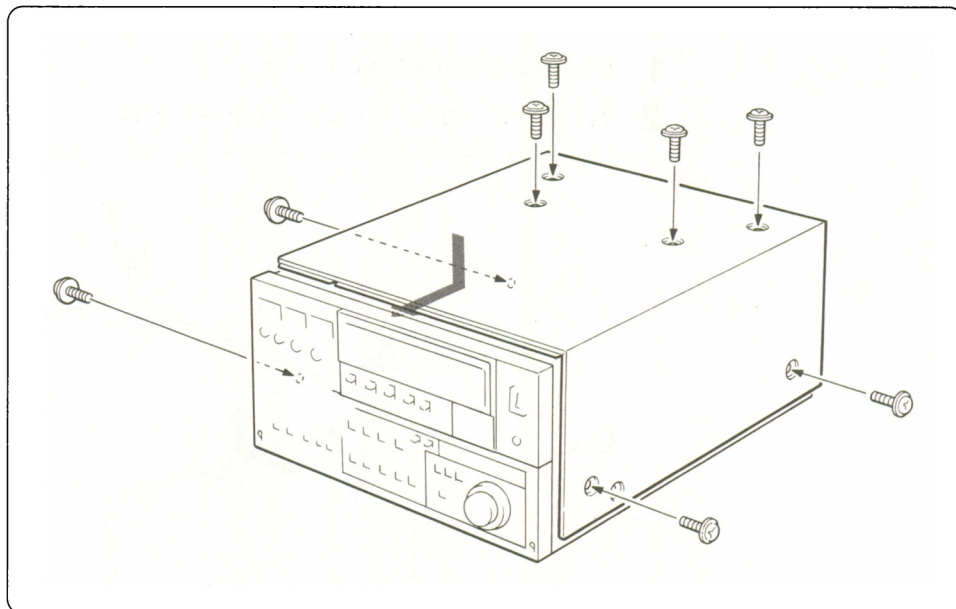
- 1 BVU-950の電源をOFFにします。
- 2 ねじを外し、VTRのキャビネットを外します。



- 3 基板を装着します。
BVU-950左側のTBCの表示のある基板挿入溝に差し込みます。



4 VTRのキャビネットを元のとおりに取り付け、ねじで固定します。



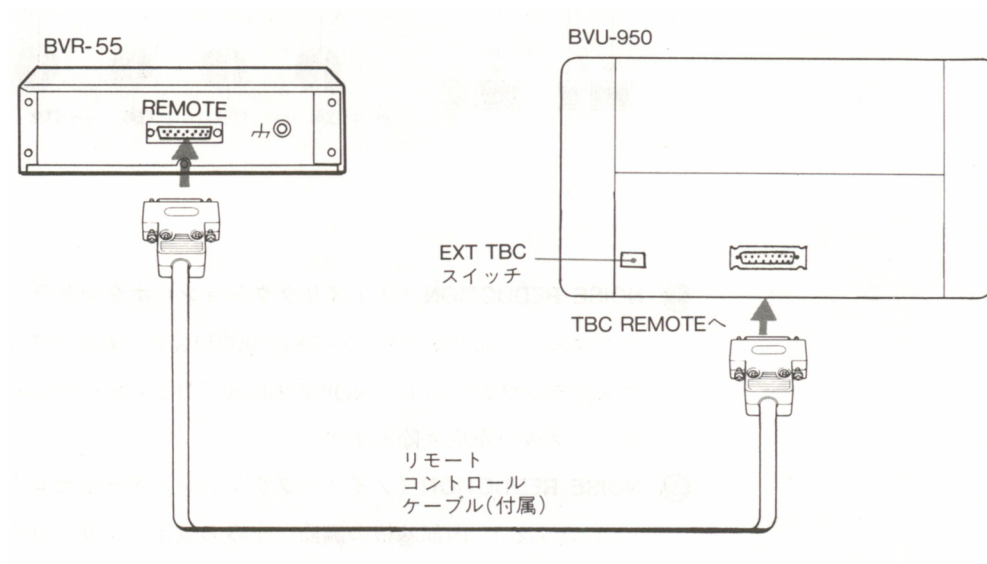
1-2-2. 初期設定

BVU-950にTBC基板を装着したあと、3.電気調整要項を参照して、次の初期設定をします。

- 1** Y出力レベル調整 (3-6.参照)
- 2** クロマレベル/HUE調整 (3-12.参照)

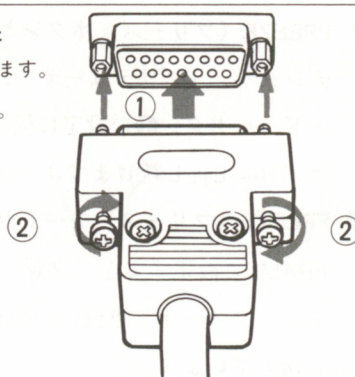
1-2-3. BVR-55の接続

- 1 BVU-950の電源をOFFにします。
- 2 BVR-55とBVU-950を付属のリモートコントロールケーブルで接続します。
- 3 BVU-950のEXT TBCスイッチをOFFにします。



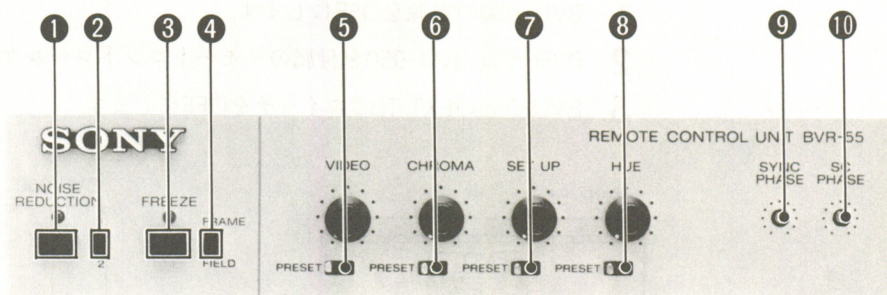
コネクタの接続のしかた

- ① コネクタを差し込みます。
- ② ねじを締め固定します。



1-3. 各部の名称と働き

1-3-1. BVR-55前面



① NOISE REDUCTION (ノイズリダクション) ボタンとランプ

デジタルノイズリデューサーBKU-902が装着されているときのみ有効です。ボタンを押すと、ランプが点灯し、NOISE REDUCTION モードセクター②の設定に従って画面のノイズ成分を取り除きます。

② NOISE REDUCTION (ノイズリダクション) モードセクター

1に設定すると、内部基板の調節つまみの設定により、好みに応じてノイズ成分を取り除くことができます。2に設定すると、U-maticの再生信号に最適な状態で自動的にノイズ成分を取り除くので、ダビング時に使用すると効果的です。

③ FREEZE (フリーズ) ボタンとランプ

デジタルノイズリデューサーBKU-902が装着されているときのみ有効です。FREEZEモードセクター④の設定に従って静止画像を得るときにこのボタンを押します。(このときVTRは走行し続けます。)

④ FREEZE (フリーズ) モードセクター

FRAMEに設定すると、フレーム単位の画質の良い静止画が得られます。FIELDに設定すると、フィールド単位の静止画が得られ、動きの多い画像を安定した静止画にするときに適しています。

⑤ VIDEO (ビデオレベル) 調整つまみ、プリセットスイッチ

スイッチをPRESETにすると、調整つまみの位置に関係なく出力信号のビデオレベルは入力信号と同じになります。

スイッチを反対側にすると調整モードになり、VIDEO調整つまみで出力信号のビデオレベルを±3dBの範囲で調整できます。

⑥ CHROMA (クロマレベル) 調整つまみ、プリセットスイッチ

スイッチをPRESETにすると、調整つまみの位置に関係なく出力信号のクロマレベルは入力信号と同じになります。

スイッチを反対側にすると調整モードになり、CHROMA調整つまみで出力信号のクロマレベルを±3dBの範囲で調整できます。

⑦ SET UP (セットアップレベル) 調整つまみ、プリセットスイッチ

スイッチをPRESETにすると、調整つまみの位置に関係なく出力信号のセットアップレベルは入力信号と同じになります。

スイッチを反対側にすると調整モードになり、SET UP調整つまみで出力信号のセットアップレベルを入力信号に対して0～+15 IREの範囲で調整できます。

⑧ HUE (色相) 調整つまみ、プリセットスイッチ

スイッチをPRESETにすると、調整つまみの位置に関係なく出力信号のヒューは入力信号と同じになります。

スイッチを反対側にすると調整モードになり、HUE調整つまみで出力信号の色相を±30°の範囲で調整できます。

- HUE調整つまみを回しても、基準信号に対する出力信号のバーストの位相は変わりません。

⑨ SYNC PHASE (システム同期位相) コントロール

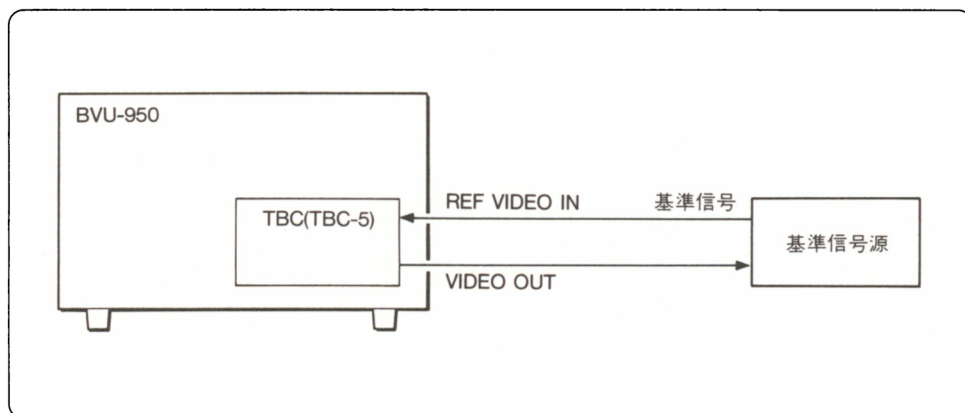
⑩ SC PHASE (システムサブキャリア位相) コントロール

基準信号源とBVU-950を接続したときのケーブル長による同期信号、サブキャリア信号の遅延を補正します。

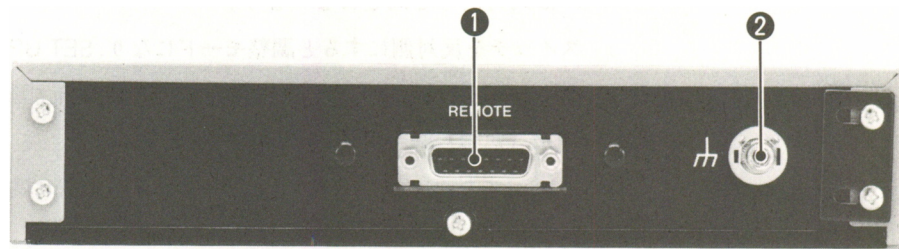
SYNC PHASEコントロールは-1～+3 μ sの範囲で調整できます。

SC PHASEコントロールの調整可能範囲は360°で、基準信号に対してどの位相でも合わせることができます。SC PHASEコントロールを調整しても同期信号の位相には影響しません。

例えば下図のように、基準信号源側にTBCの出力を戻した場合に、基準信号源側でTBC出力の同期信号とサブキャリア信号の位相を基準信号と一致させたいときなどに調整します。



1-3-2. 裏面



① REMOTE（リモート）コネクター

付属のリモートコントロールケーブルを使って、BVU-950のTBC REMOTE端子と接続します。

② アース端子

アース用の端子です。

1-4. 主な仕様

消費電力	20W
最大外形寸法(幅/高さ/奥行き)	
	基板： 420×205×25mm
	コントロールユニット：212×43.6×110mm
重量	
	基板： 1.0kg
	コントロールユニット：820g
動作温度	+5°C～+40°C
保存温度	-20°C～+60°C
ビデオ系	
帯域幅	0～4.2MHz±0.5dB
	5MHz-3dB
S/N	55dB
DG	2%以下
DP	2°以下
Kファクター (2Tパルス)	
	1%以下
ウィンドー	15Hp-p
残留エラー	カラー：±2.5nsec以内
	白黒：±15nsec以内
Y/Cディレイ	25nsec以内
プロセッサ調整範囲 (BVR-55によりコントロール)	
OUTPUT VIDEO	±3dB
CHROMA	±3dB
SET UP	0～15 IRE
HUE	±30°
SYSTEM SYNC PHASE	
	-1～+3μs
SYSTEM SC PHASE	
	360°
付属品	リモートコントロールケーブル (1)
	オペレーションアンドメンテナンスマニュアル (1)

仕様および外観は改良のため予告なく変更することがありますが、ご了承ください。

SECTION 1 OPERATION

1-1. Overview

The BKU-901A is a plug-in type time base corrector designed for Sony BVU-950 U-matic video cassette recorder. This time base corrector converts the playback signal of the VTR into a signal which satisfies the broadcast standards. It is composed of a TBC-5 circuit board and a BVR-55 remote control unit.

Wide window

The window of 15Hp-p enables the correction of jitters over a wide range. Even if the jitters exceed the correction range, horizontal movement nor sync fluctuation will not occur.

8 bits/4 fsc sampling

Playback signals are digitized 8 bits through 4 fsc sampling. This avoids any deterioration of the bandwidth and of the S/N in quantizing.

Synchronization in high-speed playback

When the VTR is in the SHUTTLE mode, playback can be synchronized with the reference signal up to ± 5 times the normal speed in color, and ± 10 times the normal speed in monochrome. Even in the F FWD and REW modes, the synchronization is possible in monochrome.

Built-in digital drop-out compensator

The drop-out compensator compensates for drop-out in either of the Y and C signals by replacing the drop-out section with the 1H previous signal. Since signal replacement is performed by a digital processing method, it causes no signal deterioration.

Built-in beat canceller

The beat canceller cancels the residual second beat of the low-frequency conversion chroma sub-carrier in the VTR output, avoiding slanted noise on the monitor screen.

Built-in sync generator

This time base corrector operates either in external or internal synchronization. When an external sync signal is connected, it automatically selects the external synchronization. The sync signal generated by the built-in sync generator is fed out from the REF VIDEO OUT connector of the BVU-950 and can be used as the reference signal for equipment connected to the VTR.

Choice of vertical blanking lines

Any desired lines of lines 10 through 20 can be blanked in vertical blanking.

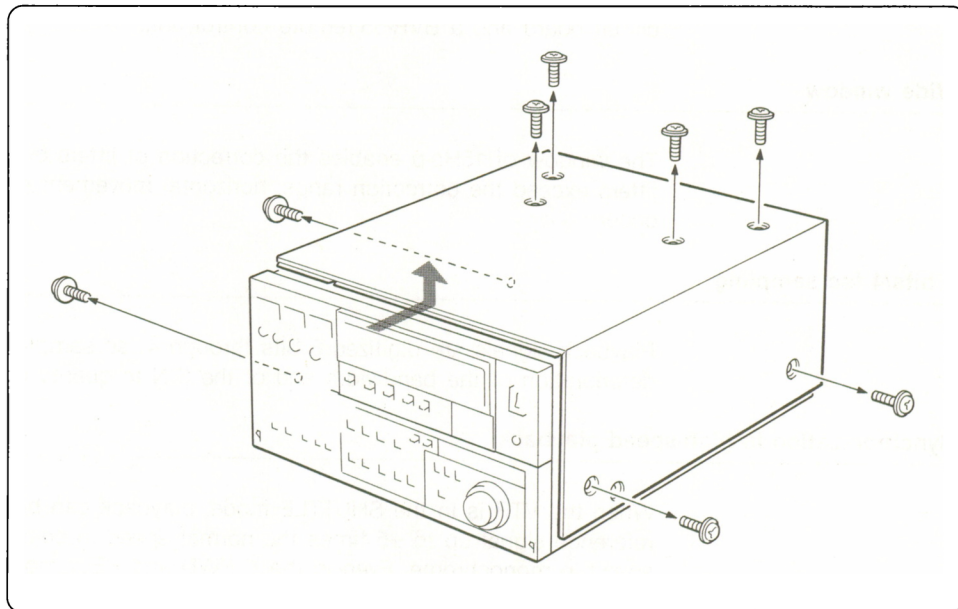
Built-in signal processing circuit

The built-in signal processing circuit permits you to adjust the video level, chroma level, set-up level, hue, sync phase and sub-carrier phase on the BVR-55 remote control unit.

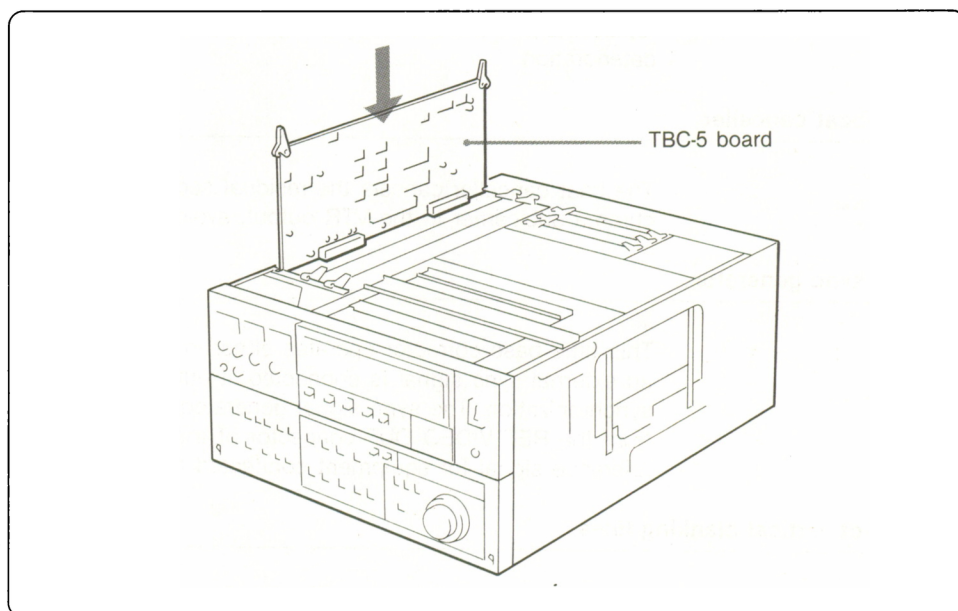
1-2. Installation

1-2-1. TBC board mounting

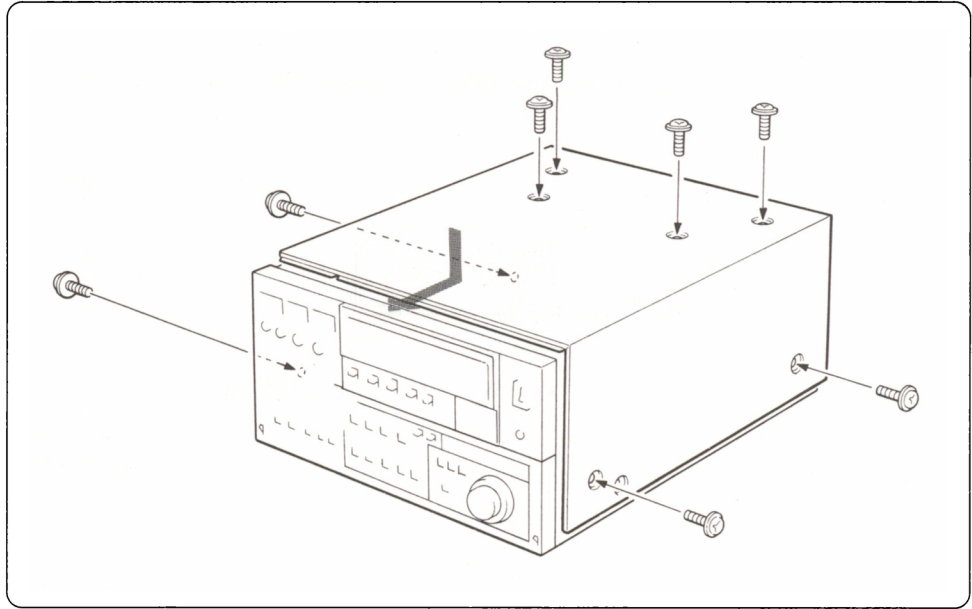
- 1 Turn off the power of the BVU-950.
- 2 Remove the cabinet from the VTR by removing the screws.



- 3 Mount the circuit board.
Insert it into the leftward slot marked with "TBC" of the VTR.



- 4** Replace the cabinet and secure it with the original screws.



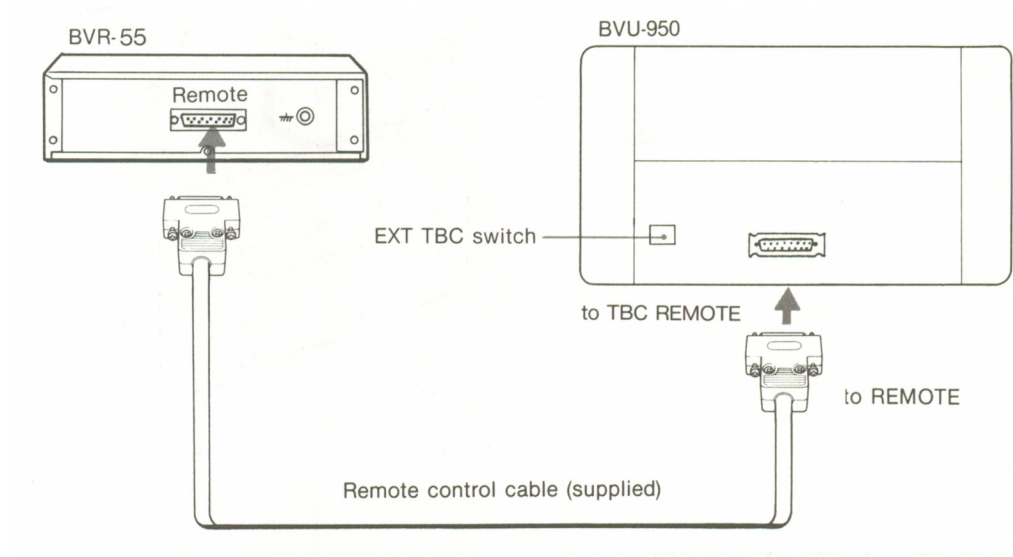
1-2-2. Initial setting

After mounting the TBC board, make the following initial adjustment, referring to the corresponding section of 3. ELECTRICAL ALIGNMENT.

- 1** Y Output Level Adjustment (Refer to 3-6.)
- 2** Chroma Level/HUE Adjustment (Refer to 3-12.)

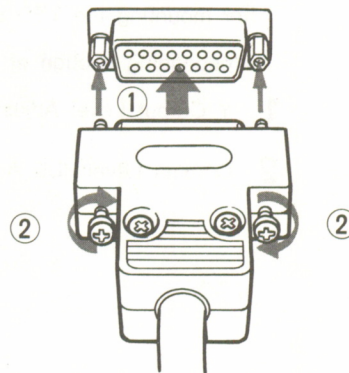
1-2-3. Connection of the BVR-55

- 1 Turn off the power of the BVU-950.
- 2 Connect the BVR-55 and the VTR using the supplied remote control cable.



Connector connection

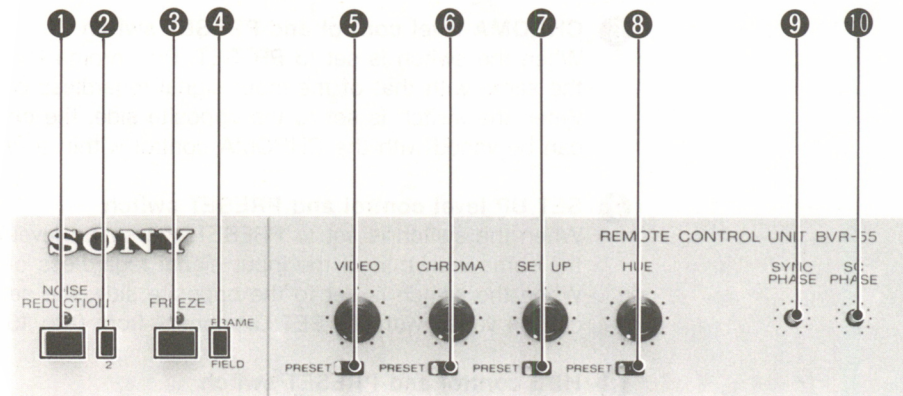
- ① Push in the connector.
- ② Tighten the screws to fix the connector.



- 3 Set the EXT TBC switch of the VTR to OFF.

1-3. Function of Parts

1-3-1. BVR-55 front panel



- ① NOISE REDUCTION button and indicator**
Operable only when the BKU-902 digital noise reducer is installed in this unit.
When this button is pushed in, you can activate the Digital Noise Reducer according to the mode selector ② setting, and the indicator lights.
- ② NOISE REDUCTION mode selector**
Set the mode selector to 1 to determine how to reduce noise by setting the controls on the inner board.
Set it to 2 to improve the signal-noise ratio about a signal recorded on a U-matic tape. Thus you can dub a tape effectively.
- ③ FREEZE button and indicator**
Operable only when the BKU-902 digital noise reducer is installed in this unit.
When this button is pushed in, you can freeze the picture displayed on the monitor according to the FREEZE mode selector's setting, but the VTR tape continues to be run. The indicator lights during freezing the picture.
- ④ FREEZE mode selector**
Set this mode selector to FRAME to obtain a high quality picture.
Set it to FIELD to obtain a stable moving image.

5 VIDEO level control and PRESET switch

When the switch is set to PRESET, the video level of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the video level of the output signal can be varied with the VIDEO control within a range of ± 3 dB.

6 CHROMA level control and PRESET switch

When the switch is set to PRESET, the chroma level of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the chroma level of the output signal can be varied with the CHROMA control within a range of ± 3 dB.

7 SET UP level control and PRESET switch

When the switch is set to PRESET, the set-up level of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the set-up level of the output signal can be varied with the SET UP control from 0 to 15 IRE against the input signal.

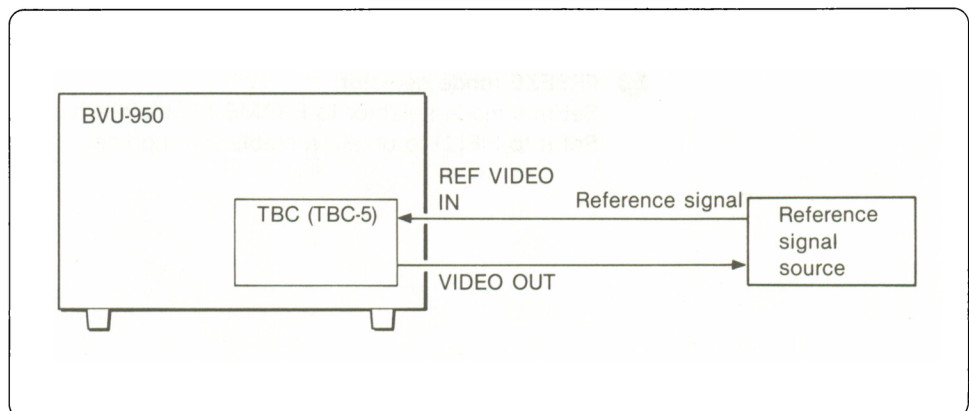
8 HUE control and PRESET switch

When the switch is set to PRESET, the hue of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the hue of the output signal can be varied with the HUE control within a range of $\pm 30^\circ$.
• The HUE control does not vary the burst phase of the output signal against that of reference signal.

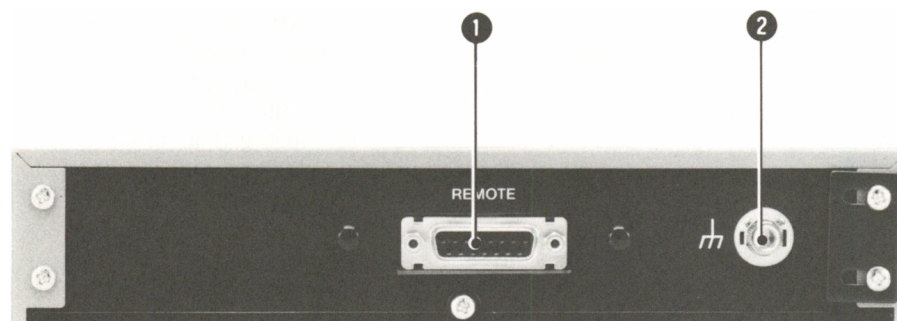
9 SYNC PHASE control

10 SC PHASE control

These controls compensate the delay of the sync or sub-carrier signal due to the length of the cable which connects a reference signal source to the VTR.
The adjustable range of the SYNC PHASE control is from -1 to $+3 \mu\text{s}$.
The adjustable range of the SC PHASE control is 360° and any SC phase of the playback signal can be adjusted to that of the reference signal. The adjustment of the SC PHASE control has no effect on the sync signal phase.
These controls are used when it is necessary to set both of the sync signal phase and the sub-carrier phase of the TBC output to those of the reference signal at the reference signal source by returning the TBC output to the reference signal source as illustrated below.



1-3-2. BVR-55 rear panel



- ① REMOTE connector**
Using the supplied remote control cable, connect this connector with the TBC REMOTE connector of the BVU-950.
- ② Ground terminal**
For frame ground.

1-4. Specifications

Power consumption	20 W
Dimensions (w/h/d)	Circuit board: 420×205×25 mm (16 ⁵ / ₈ ×8 ¹ / ₈ ×1 inches) Control unit: 212×43.6×110 mm (8 ³ / ₈ ×1 ³ / ₄ ×4 ³ / ₈ inches)
Weight	Circuit board: 1.0 kg (2 lb 3 oz) Control unit: 820 g (1 lb 12 oz)
Operating temperature	+5°C to +40°C (+41°F to +104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Video	
Bandwidth	0 to 4.2 MHz ±0.5 dB 5 MHz −3 dB
S/N	55 dB
DG	Less than 2 %
DP	Less than 2°
K factor (2T pulse)	Less than 1 %
Window	15 Hp-p
Residual error	Color: Within ±2.5 nsec Monochrome: Within ±15 nsec
Y/C delay	Within 25 nsec
Processor adjustment range	(controlled on the BVR-55)
OUTPUT VIDEO level	±3 dB
CHROMA level	±3 dB
SET UP level	0 to 15 IRE
HUE	±30°
SYSTEM SYNC PHASE	−1 to +3 μs
SYSTEM SC PHASE	360°
Supplied accessories	Remote control cable (1) Operation and maintenance manual (1)

Design and specifications subject to change without notice.

SECTION 1 EXPLOITATION

1-1. Aperçu

Le BKU-901A est un correcteur de base de temps de type enfichable spécialement conçu pour les magnétoscopes à cassette U-matic Sony BVU-950. Ce correcteur de base de temps convertit le signal de lecture du magnétoscope en un signal qui satisfait les normes d'émission. Il se compose d'une plaquette de circuit TBC-5, et d'une unité de télécommande BVR-55.

Déclenchement périodique étendu

Le déclenchement périodique de 15H c-c assure une correction du frémissement sur une large plage. Même si le frémissement est supérieur à la plage de correction, aucun décentrement horizontal ni fluctuation de synchronisation n'aura lieu.

Echantillonnage de 8 bits/4 fsc

Les signaux de lecture sont numérisés en 8 bits par un échantillonnage de 4 fsc. Ceci évite toute détérioration de la bande passante et du rapport signal/bruit lors de la quantification.

Synchronisation à la lecture à grande vitesse

Lorsque le magnétoscope est en mode "SHUTTLE" (navette), la lecture peut être synchronisée au signal de référence jusqu'à environ ± 5 fois la vitesse normale, en couleur, et environ ± 10 fois la vitesse normale, en noir et blanc. La synchronisation reste possible en noir et blanc, même en mode "F FWD" (avance rapide) et "REW" (rebobinage).

Compensateur de perte de niveau numérique incorporé

Le compensateur de perte de niveau compense la perte des signaux d'illumination (Y) ou de chrominance (C) en remplaçant la section perdue par le signal précédent 1H. Comme le remplacement du signal est effectué par traitement numérique, il ne provoque aucune détérioration du signal.

Suppresseur de battement incorporé

Il supprime le deuxième battement résiduel de la conversion de basse fréquence de sous-porteuse de la chrominance à la sortie de magnétoscope, ce qui évite tout bruit oblique sur l'écran du moniteur.

Générateur de synchronisation incorporé

Le correcteur de base de temps fonctionne soit en synchronisation externe, soit en synchronisation interne. Lorsqu'un signal de synchronisation externe est raccordé, il choisit automatiquement la synchronisation externe. Le signal de synchronisation, engendré par le générateur de synchronisation incorporé, est fourni par le connecteur REF VIDEO OUT du magnétoscope BVU-950 et peut être utilisé comme signal de référence pour tout appareil raccordé au magnétoscope.

Choix de lignes de suppression verticale

Toute ligne comprise entre 10 et 20 lignes peut être supprimée grâce à la fonction de suppression verticale.

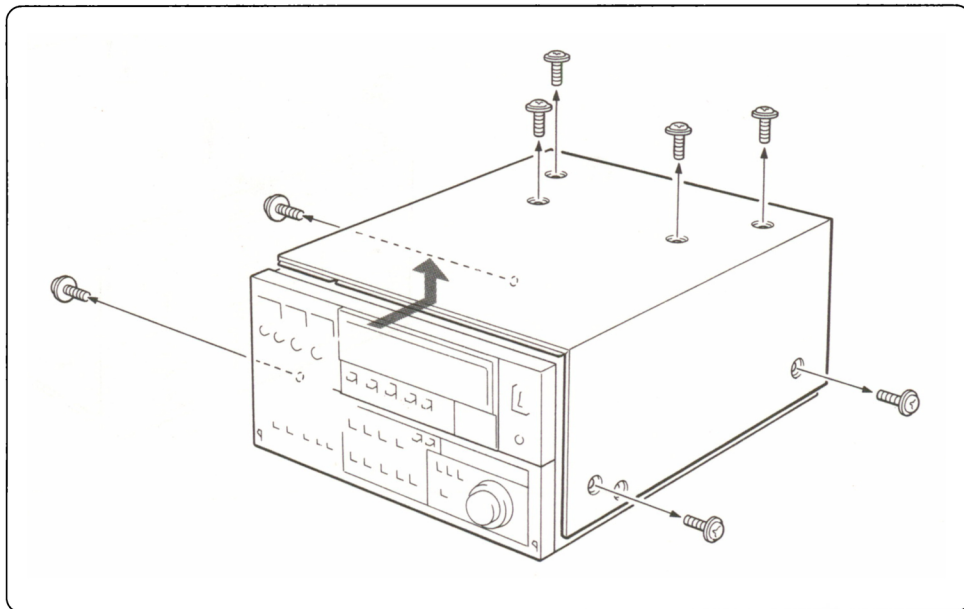
Circuit de traitement de signal incorporé

Le circuit de traitement de signal incorporé permet à l'utilisateur d'ajuster le niveau vidéo, le niveau de chrominance, le niveau de décollement du noir, la teinte, la phase de synchronisation et la phase de sous-porteuse par l'unité de télécommande BVR-55.

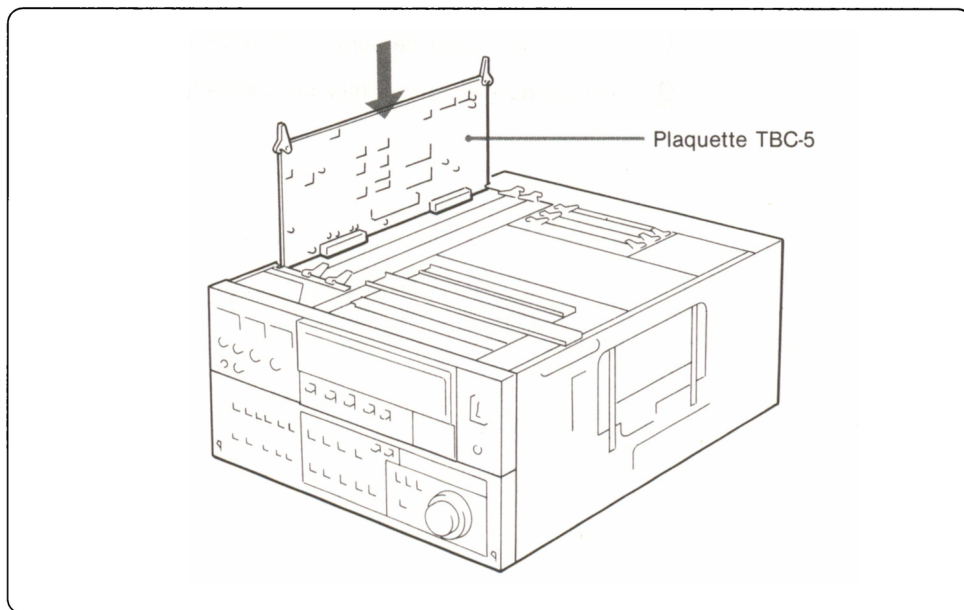
1-2. Installation

1-2-1. Mise en place de la plaquette de circuit CBT

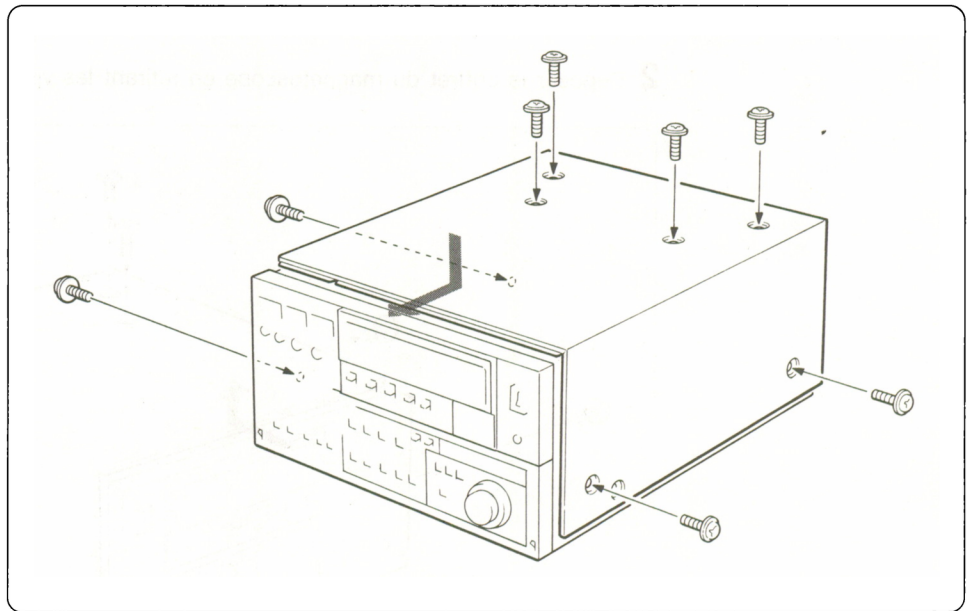
- 1** Mettre le magnétoscope BVU-950 hors tension.
- 2** Déposer le coffret du magnétoscope en retirant les vis.



- 3** Installer la plaquette de circuit.
L'insérer dans la fente gauche, marquée par la mention "TBC", du magnétoscope.



4 Remettre le coffret en place et le fixer en serrant les vis d'origine.



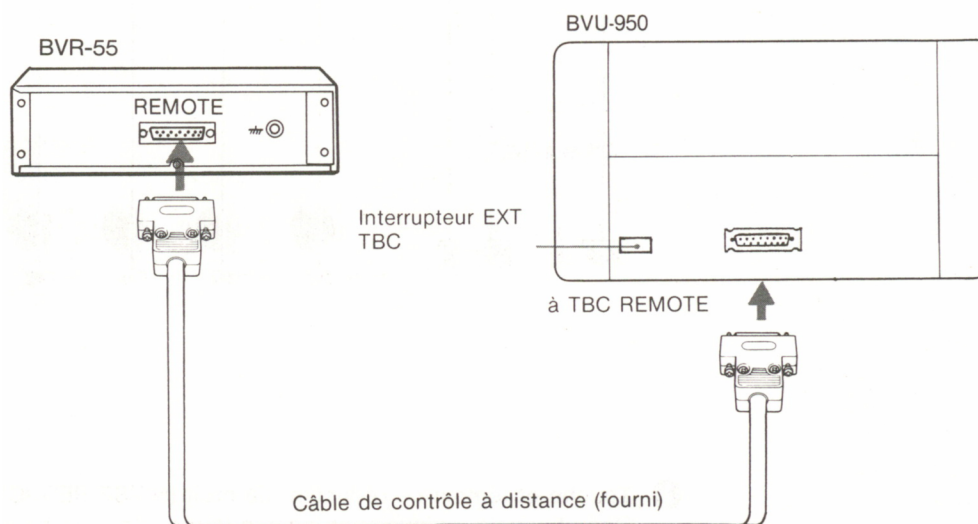
1-2-2. Réglage initial

Après avoir installé la plaquette de circuit CBT, effectuer les réglages suivants, en se reportant à "3. ELECTRICAL ALIGNMENT".

- 1** Réglage du niveau de sortie d'illumination (Voir 3-6.)
- 2** Réglage du niveau de chrominance/teinte (Voir 3-12.)

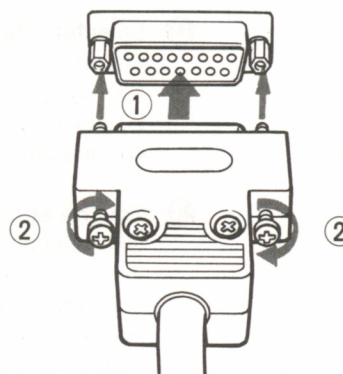
1-2-3. Connexion de la BVR-55

- 1 Mettre le magnétoscope BVU-950 hors tension.
- 2 Raccorder la BVR-55 et le magnétoscope à l'aide du câble de contrôle à distance fourni.



Connexion du connecteur

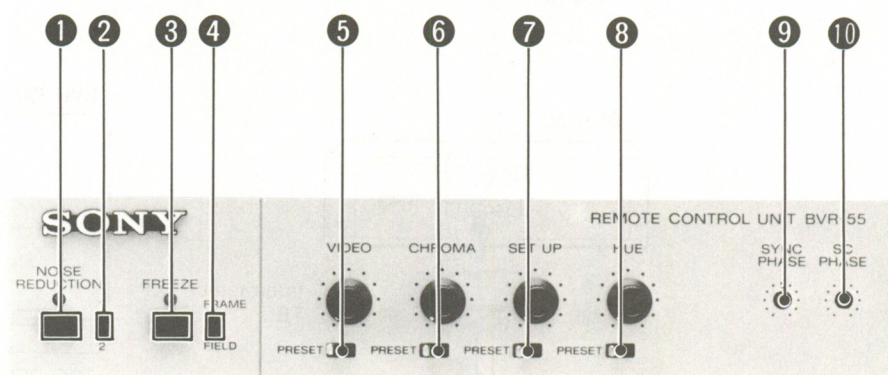
- ① Enficher le connecteur.
- ② Serrer les vis pour le fixer fermement.



- 3 Commuter l'interrupteur EXT TBC du magnétoscope sur arrêt (OFF).

1-3. Fonction des commandes

1-3-1. Panneau avant de la BVR-55



- ① Touche et témoin de réduction de bruit (NOISE REDUCTION)**
Opérationnels uniquement lorsque le réducteur de bruit numérique BKU-902 est installé dans cet appareil.
Lorsque cette touche est enfoncée, il est possible d'activer le réducteur de bruit numérique en fonction du réglage du sélecteur NOISE REDUCTION ②, et le témoin s'allume.
- ② Sélecteur de mode de réduction de bruit (NOISE REDUCTION)**
Placer ce sélecteur sur 1 pour déterminer la manière de réduire le bruit, en ajustant les réglages de la plaquette intérieure.
Le placer sur 2 pour améliorer le rapport signal sur bruit d'un signal enregistré sur une bande U-matic. Il est ainsi possible de doubler efficacement une bande.
- ③ Touche et témoin de gel d'image (FREEZE)**
Opérationnels uniquement lorsque le réducteur de bruit numérique BKU-902 est installé dans cet appareil.
Lorsque cette touche est enfoncée, il est possible d'immobiliser l'image affichée sur le moniteur, en fonction du réglage du sélecteur FREEZE ④, mais la bande du magnétoscope continue à défiler. Le témoin s'allume pendant que l'image est immobilisée.
- ④ Sélecteur de mode de gel d'image (FREEZE)**
Placer ce sélecteur sur FRAME pour obtenir des images de haute qualité.
Le placer sur FIELD pour obtenir des images stables.
- ⑤ Réglage de niveau vidéo (VIDEO) et interrupteur de pré-réglage (PRESET)**
Lorsque l'interrupteur est commuté sur PRESET, le niveau vidéo du signal de sortie est identique à celui du signal d'entrée, indépendamment du réglage.
Lorsque l'interrupteur est commuté sur l'autre côté, le niveau vidéo du signal de sortie peut être modifié par le réglage VIDEO dans une plage de ± 3 dB.

6 Réglage de niveau de chrominance (CHROMA) et interrupteur de préréglage (PRESET)

Lorsque l'interrupteur est commuté sur PRESET, le niveau de chrominance du signal de sortie est identique à celui du signal d'entrée, indépendamment du réglage.

Lorsque l'interrupteur est commuté sur l'autre côté, le niveau de chrominance du signal de sortie peut être modifié par le réglage CHROMA dans une plage de ± 3 dB.

7 Réglage de niveau de décollement du noir (SET UP) et interrupteur de préréglage (PRESET)

Lorsque l'interrupteur est commuté sur PRESET, le niveau de décollement du noir du signal de sortie est identique à celui du signal d'entrée, indépendamment du réglage.

Lorsque l'interrupteur est commuté sur l'autre côté, le niveau de décollement du noir du signal de sortie peut être modifié par le réglage SET UP de 0 à 15 IRE par rapport au signal d'entrée.

8 Réglage de teinte (HUE) et interrupteur de préréglage (PRESET)

Lorsque l'interrupteur est commuté sur PRESET, la teinte du signal de sortie est identique à celle du signal d'entrée, indépendamment du réglage.

Lorsque l'interrupteur est commuté sur l'autre côté, la teinte du signal de sortie peut être modifiée par le réglage HUE dans une plage de $\pm 30^\circ$.

- Le réglage HUE ne modifie pas la phase de salve du signal de sortie par rapport à celle du signal de référence.

9 Réglage de phase de synchronisation du système (SYNC PHASE)

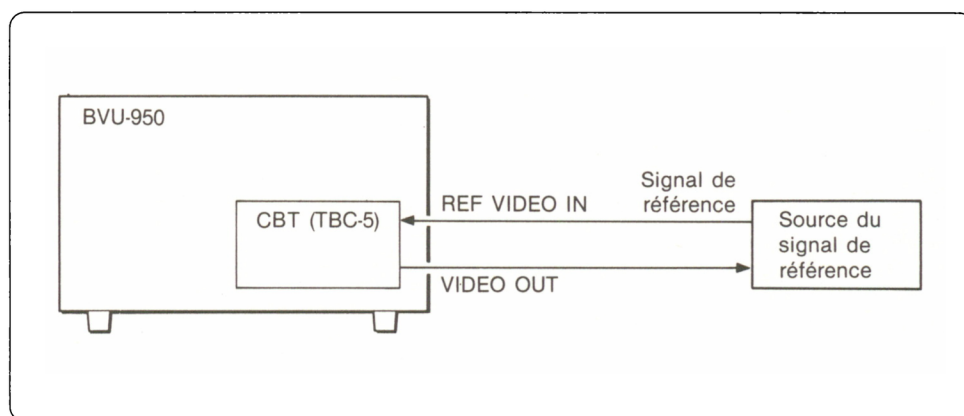
10 Réglage de phase de sous-porteuse du système (SC PHASE)

Ces réglages compensent le retard du signal de synchronisation ou de sous-porteuse dû à la longueur du câble qui raccorde la source du signal de référence au magnétoscope.

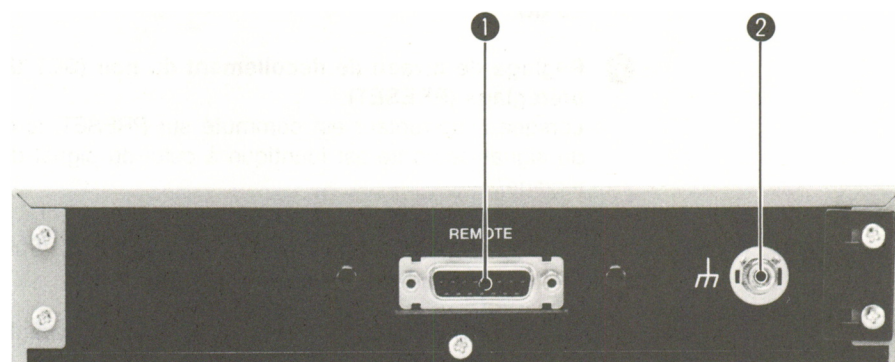
La plage de variation du réglage SYNC PHASE est comprise entre -1 et $+3 \mu\text{s}$.

La plage de variation du réglage SC PHASE, quant à elle, elle est de 360° et toute phase de sous-porteuse du signal de lecture peut être ajustée sur celle du signal de référence. L'ajustement du réglage SC PHASE n'affecte pas la phase du signal de synchronisation.

Ces réglages sont utilisés lorsqu'il est nécessaire de régler la phase du signal de synchronisation et la phase de sous-porteuse de la sortie CBT sur celle du signal de référence à la source du signal de référence, en y renvoyant la sortie CBT comme illustré ci-dessous.



1-3-2. Panneau arrière de la BVR-55



- 1 Connecteur de télécommande (REMOTE)**
A l'aide du câble de contrôle à distance, fourni, raccorder ce connecteur au connecteur TBC REMOTE du magnétoscope BVU-950.
- 2 Borne de masse**
Destinée à la masse du coffret.

1-4. Spécifications

Consommation	20 W
Dimensions (l/h/p)	Plaque de circuit: 420 × 205 × 25 mm (16 ⁵ / ₈ × 8 ¹ / ₈ × 1 pouces) Unité de contrôle: 212 × 43,6 × 110 mm (8 ³ / ₈ × 1 ³ / ₄ × 4 ³ / ₈ pouces)
Poids	Plaque de circuit: 1,0 kg (2 liv. 3 on.) Unité de contrôle: 820 g (1 liv. 12 on.)
Température de fonctionnement	De +5°C à +40°C (de +41°F à +104°F)
Température d'entreposage	De -20°C à +60°C (de -4°F à +140°F)
Image	
Bande passante	De 0 à 4,2 MHz ±0,5 dB 5 MHz -3 dB
Signal/bruit	55 dB
Gain	Inférieur à 2 %
Phase différentielle	Inférieure à 2°
Facteur K (Impulsion 2T)	Inférieur à 1 %
Déclenchement périodique	15H c-c
Erreur résiduelle	Couleur: pas plus que ±2,5 nsec. Noir et blanc: pas plus que ±15 nsec.
Retard d'illumination/chrominance	Pas plus de 25 nsec.
Plage d'ajustement du traitement (contrôlé par la BVR-55)	
Niveau de sortie video	±3 dB
Niveau de chrominance	±3 dB
Niveau de décollement du noir	De 0 à 15 IRE
Teinte	±30°
Phase de synchronisation du système	De -1 à +3 μs
Phase de sous-porteuse du système	360°
Accessoires fournis	Câble de contrôle à distance (1) Manuel d'exploitation et d'entretien (1)

La conception et les spécifications sont modifiables sans préavis.

第2章 設置

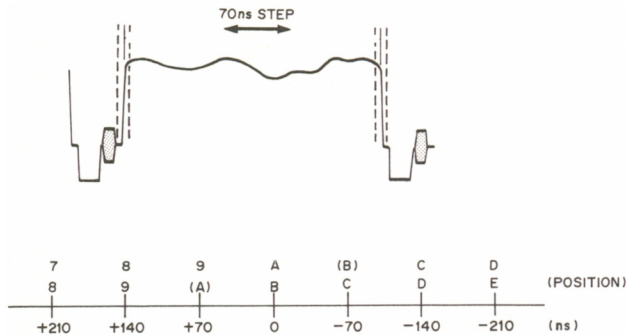
2-1 スイッチのセッティング

(1) S301: VIDEO PHASE 調整スイッチ

このスイッチにより、SYNC に対する VIDEO 位相を ± 70 ns step で調整可能。基準は A あるいは B の位置（赤でマーキング）で、TBC 出力の VIDEO 位相が TBC 入力 of VIDEO 位相と同じとなる。

(B), C, D, E : VIDEO 位相が遅れる位置

(A), 9, 8, 7 …: VIDEO 位相が進む位置



工場出荷時：基準位置

(2) S402: SYNC 8H Delay スイッチ

BVU-950が EE/REC/EDIT Mode の時は、BVU-950の出力は、TBC を BYPASS するが、TBC を強制的に ON することもできる。

EE/REC/EDIT Mode 時に TBC を強制的に ON した場合 TBC の出力ビデオ信号は、VTR の入力ビデオ信号よりも 8H 遅れるので、TBC 出力でつけかえる SYNC も 8H 遅らせた方がよい。

S402を8H側にセットすることにより EE/REC/EDIT Mode 時に TBC 出力でつけかえる SYNC を 8H 遅らせることができる。

S402を0H側にセットすれば TBC 出力でつけかえる SYNC の Delay はないのでリファレンス信号の SYNC と同位相となる。

但しこの場合、TBC 出力のビデオ信号は 8H Delay しているので画面上で V 方向の shift が起こる。

工場出荷時：8H 側

(3) S501: BEAT CANCELLER ON/OFF スイッチ

このスイッチを ON にすることにより VTR 出力に残っている低域変換クロマの 2 次ビートをキャンセルすることができる。

工場出荷時：ON

(4) S502, 503, 504: V ブランキングラインセレクトスイッチ (S503, S504: Bit1~Bit6)

S503, S504 : TBC 出力信号のブランキング内の 10~21 ラインの任意のラインのブランキングを ON/OFF することができる。

S502 : 21ラインブランキングした状態 (S504の Bit6を ON)でこのスイッチを ON すると、偶数フィールドの 21ラインが $\frac{1}{2}$ H ブランキングされる。

ディップスイッチ	ライン	ディップスイッチ	ライン
S503-Bit 1	10	S504-Bit 1	16
S503-Bit 2	11	S504-Bit 2	17
S503-Bit 3	12	S504-Bit 3	18
S503-Bit 4	13	S504-Bit 4	19
S503-Bit 5	14	S504-Bit 5	20
S503-Bit 6	15	S504-Bit 6	21

ブランキングラインに相当するスイッチを ON する。

工場出荷時：S503：全て ON

S504：全て ON

S502：OFF

(5) S701: SET UP レベル制限スイッチ

BVR-55の SET UP 調整つまみにより、TBC OUT のセットアップを 0~+ 15IRE の範囲で調整可能。

S701を OFF (0IRE の反対位置) にすることにより、- 5 IRE まで負の方向に調整範囲を広げることができる。

工場出荷時：0 IRE

SECTION 2 INSTALLATION

2-1. SWITCH SETTING

(1) S301: Video Phase Adjusting Switch

The video phase with the SYNC signal can be adjusted by ± 70 ns step by this switch.

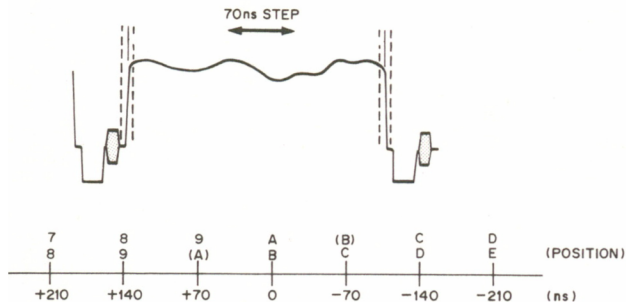
The reference is in position A or B (marked A or B with red felt pen). The video signal phase of the TBC output signal becomes identical to the TBC input signal phase.

Positions (B), C, D, and E:

The video signal phase delays.

Positions (A), 9, 8, 7, . . .:

The video signal phase advances.



When the unit is shipped, this switch is set to the reference position.

(2) S402: SYNC 8H-delay Switch

When the BVU-950 is in the EE/REC/EDIT mode, the output signal from the BVU-950 bypasses the TBC circuit, but the TBC circuit can be set forcibly to ON in these modes.

When the TBC circuit in the BVU-950 is set to ON in the EE/REC/EDIT mode, the TBC output signal delays by 8H against the VTR input signal. Therefore, the sync signal that is replaced by the TBC output had better delay by 8H.

When S402 is set to the 8H position, the sync signal that is replaced by the TBC output is delayed by 8H in the EE/REC/EDIT mode.

When S402 is set to the 0H position, the sync signal is not delayed. Therefore, the sync signal is the same phase as the reference signal.

In this case, the TBC output video signal is delayed by 8H, therefore the video signal is shifted to the vertical direction.

When the unit is shipped, this switch is set to the 8H position.

(3) S501: Beat Canceller ON/OFF Switch

Turn ON the Beat Canceller ON/OFF switch, the secondary beat of chroma down-converted carrier remained into the VTR output can be cancelled.

When the unit is shipped, this switch is set to the ON position.

(4) S503, S504: V Blanking Line Select Switches

(S503: Bit 1 - Bit 6 / S504: Bit 1 - Bit 5)

S503, S504: The blanking of any line between 10 line through 20 line of the TBC output signal can be turned ON/OFF.

Dip Switch	line	Dip Switch	line
S503-Bit 1	10	S504-Bit 1	16
S503-Bit 2	11	S504-Bit 2	17
S503-Bit 3	12	S504-Bit 3	18
S503-Bit 4	13	S504-Bit 4	19
S503-Bit 5	14	S504-Bit 5	20
S503-Bit 6	15	S504-Bit 6	—

Turn ON the switch that corresponds to blanking the line.

When the unit is shipped, S503 and S504 are set to the ON position.

(5) S701: SET UP Level Adjusting Switch

The set up level of the TBC output signal can be adjusted using the BVR-55's SET UP control within the range from 0 to +15 IRE.

When this switch is set to OFF, the adjustment range can be extended up to -5 IRE (the opposite position to 0 IRE).

When the unit is shipped, this switch is set to the 0 IRE position.

第3章 電気調整要項

[使用機器]

- ・ 2 現象オシロスコープ
- ・ NTSC 信号発生器 (TEKTRONIX1410または相当品)
- ・ ベクタースコープ (TEKTRONIX520または相当品)
- ・ VTR (BVU-950)
- ・ TBC リモートコントローラー (BVR-55)
- ・ 周波数カウンター
- ・ NTSC WAVEFORM MONITOR
- ・ デジタル電圧計
- ・ KSP カセットテープ
- ・ アライメントテープ：RR5-1SD (部品番号：8-960-037-80)-SP テープ

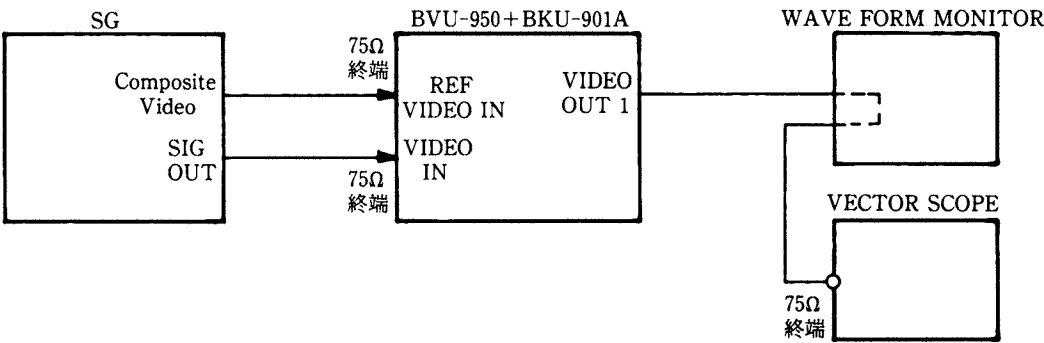
TIME	VIDEO	AUDIO	TIME CODE
5	カラーバー	——	——
3	ゲーティッドスイープ (B/W)	1kHz, 0dB	——
3	ゲーティッドスイープ (カラー)	10kHz, -10dB	——
3	パルス／バー (カラー) (MOD12.5T と逆2T)	1kHz, -20dB (NR : OFF) 40Hz, -20dB (NR : OFF) 7kHz, -20dB (NR : OFF) 10kHz, -20dB (NR : OFF) 15kHz, -20dB (NR : OFF)	——
2	パルス／バー (B/W) (MOD12.5T と逆2T)	1kHz, -20dB (NR : ON) 15kHz, -20dB (NR : ON)	——
2	モノスコープ (カラー)	——	——
2	擬似カラーバー	——	タイムコード

○ BVU-950のセッティング

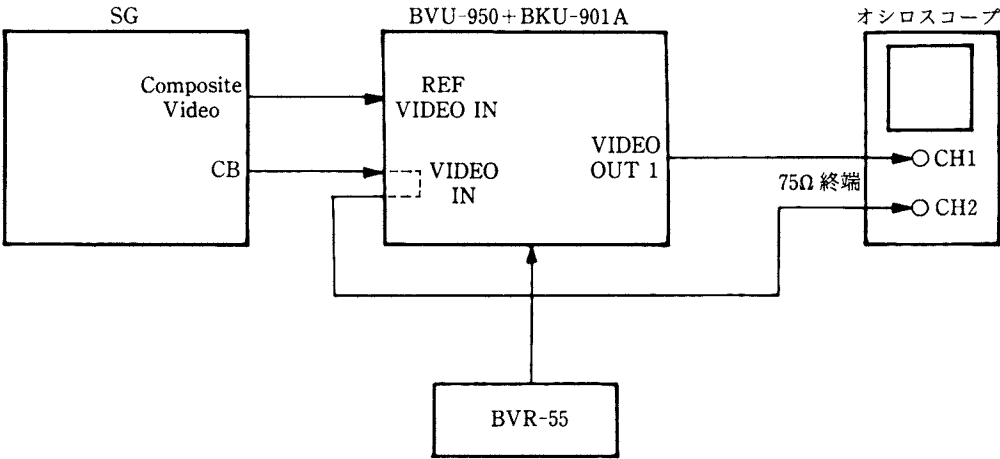
VIDEO IN 75 Ω 終端スイッチON
 REF VIDEO IN 75 Ω 終端スイッチ.....ON
 SERVO LOCKAUTO
 FRAMINGON
 EXT TBCOFF

INT TBCON

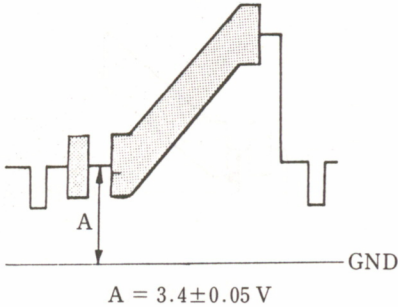
接続図 1



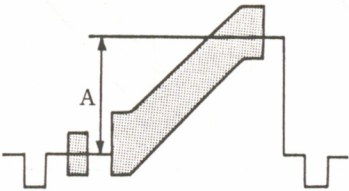
接続図 2



3-1. ペDESTALレベル調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; Ramp linearity • REF VIDEO IN ; Composite video 	CH-1 ; TP101/TBC-5 (N-7) GND ; E102/TBC-5 (N-7) <div style="text-align: center;">  <p>$A = 3.4 \pm 0.05 \text{ V}$</p> </div>	● RV102/TBC-5 (P-7)

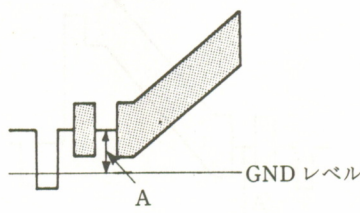
3-2. Y入力レベル調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; Ramp linearity • REF VIDEO IN ; Composite video 	CH-1 ; TP101/TBC-5 (N-7) GND ; E102/TBC-5 (N-7) <div style="text-align: center;">  <p>$A = 1.1 \pm 0.02 \text{ V}$</p> </div>	● RV103/TBC-5 (R-7)

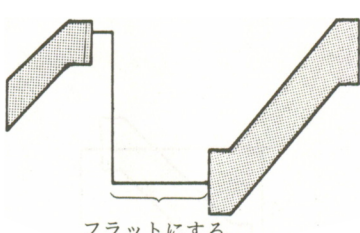
3-3. A/D コンバーター基準電圧調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; EE • デジタル電圧計 	⊕側 ; TP103/TBC-5 (N-5) ⊖側 ; E102/TBC-5 (N-7) <div style="text-align: center;"> $3 \pm 0.05 \text{ Vdc}$ </div>	● RV101/TBC-5 (P-5)

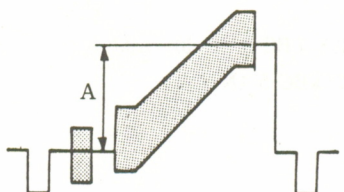
3-4. クランプレベル調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; Ramp linearity • REF VIDEO IN ; Composite video 	CH-1 ; TP702/TBC-5 (G-5) GND ; E702/TBC-5 (H-7) <div style="text-align: center;">  <p>A = 50 ± 5 mV</p> </div>	② RV705/TBC-5 (F-7)

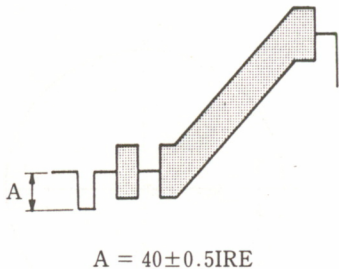
3-5. ブランキングレベル調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; Ramp linearity • REF VIDEO IN ; Composite video 	TP701/TBC-5 (E-6) <div style="text-align: center;">  <p>フラットにする</p> </div>	② VR-1 (IC711)/TBC-5 (H-6) <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <div style="display: flex; justify-content: space-between;"> <div>IC711</div> <div>②</div> </div> <div style="display: flex; justify-content: space-between;"> <div>VR-1</div> <div>□</div> </div> </div>

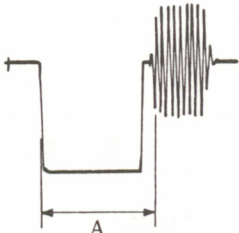
3-6. Y 出力レベル調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; Ramp linearity • REF VIDEO IN ; Composite video 	VIDEO OUT 1 (75 Ω 終端) <div style="text-align: center;">  <p>A = 100 ± 1 IRE</p> </div>	② RV701/TBC-5 (G-5)

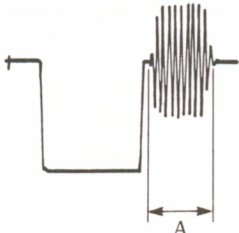
3-7. シンクレベル調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; Ramp linearity • REF VIDEO IN ; Composite video 	<p>VIDEO OUT 1 (75 Ω 終端)</p>  <p>$A = 40 \pm 0.5 \text{IRE}$</p>	<p>● RV708/TBC-5 (E-6)</p>

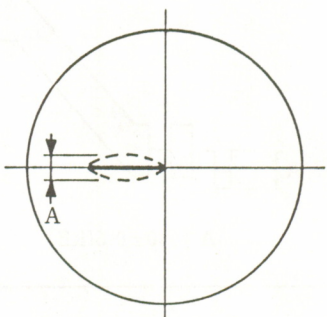
3-8. バースト位置調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	<p>VIDEO OUT 1 (75Ω 終端)</p>  <p>$A = 5.4 \pm 0.2 \mu\text{s}$</p>	<p>● RV703/TBC-5 (F-5)</p>

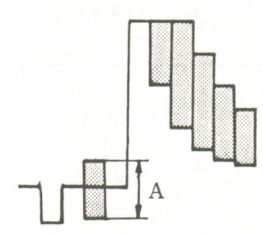
3-9. バースト幅調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	<p>VIDEO OUT 1 (75Ω 終端)</p>  <p>$A = 2.52 \pm 0.28 \mu\text{s}$</p>	<p>● RV704/TBC-5 (E-4)</p>

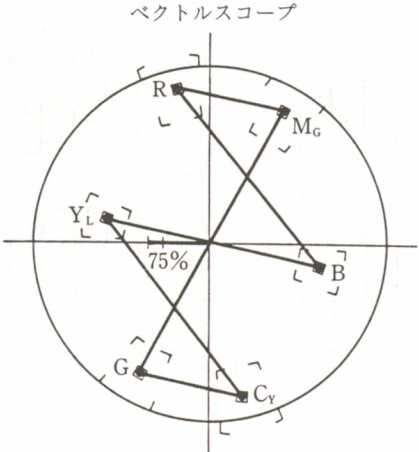
3-10. パースチューニング調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video • ベクトルスコープ 	<p>VIDEO OUT 1 (75 Ω 終端)</p>  <p>$A \rightarrow 0$ (パーストの軌跡を直線にする)</p>	<p>● LV701/TBC-5 (E-6)</p>

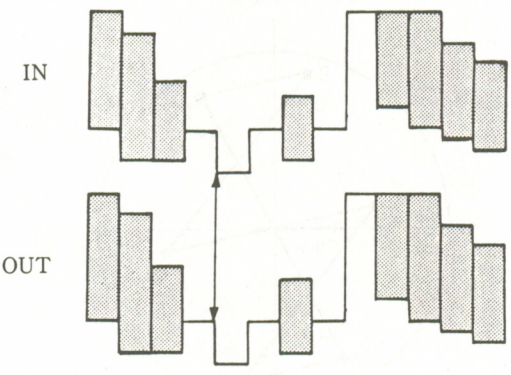
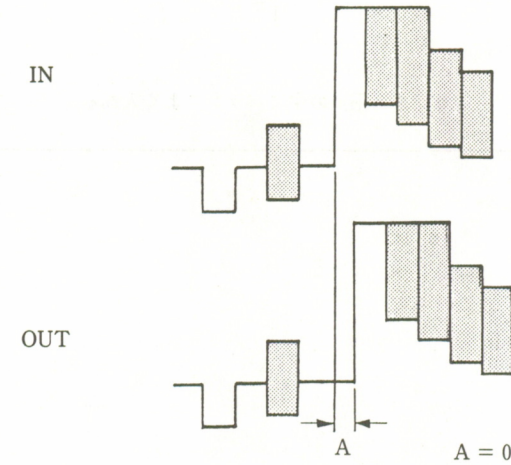
3-11. パーストレベル調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	<p>VIDEO OUT 1 (75 Ω 終端)</p>  <p>$A = 40 \pm 0.5 \text{ IRE}$</p>	<p>● RV503/TBC-5 (D-4)</p>

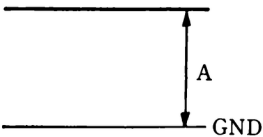
3-12. クロマレベル/HUE 調整

調整時の状態	規格	調整箇所
<div><ul style="list-style-type: none">• VTR のモード ; PB• VIDEO IN ; カラーバー• REF VIDEO IN ; Composite video• KSP カセットテープを挿入し自己記録部分を再生する</div>	<div>VIDEO OUT 1 (75 Ω 終端)</div> <div><p>ベクトルスコープ</p></div> <div>各輝点を (田) の中にバランスよく入れる。</div>	<div><ul style="list-style-type: none">• クロマレベル調整● RV104/TBC-5 (S-7)• HUE 調整● RV301/TBC-5 (S-2)</div>

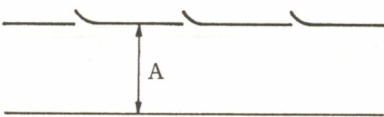
3-13. ビデオ位相調整

調整時の状態	規格	調整箇所
<div>• VTR のモード ; EE</div> <div>• VIDEO IN ; カラーバー</div> <div>• REF VIDEO IN ; Composite video</div> <div>• 接続図 2 を参照</div>	<div>Step 1.</div> <div>BVR-55の「SYNC PHASE」で VIDEO IN/OUT の SYNC の位相を一致させる。</div> <div></div> <div>Step 2.</div> <div></div> <div>$A = 0 \pm 20 \text{ ns}$</div>	<div>● RV302/TBC-5 (T-3)</div>

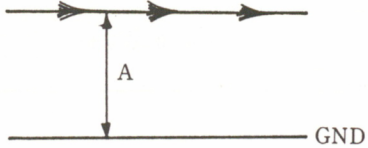
3-14. カラーモードライトクロック VCO 調整

調整時の状態	規格	調整箇所
<div>• VTR のモード ; EE</div> <div>• VIDEO IN ; カラーバー</div> <div>• REF VIDEO IN ; Composite video</div>	<div>CH-1 ; TP304/TBC-5 (P-3)</div> <div>GND ; E302/TBC-5 (N-1)</div> <div></div> <div>$A = 2.8 \pm 0.05 \text{ V}$</div>	<div>● LV302/TBC-5 (P-4)</div>

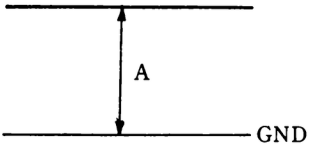
3-15. B/W モードライトクロック VCO 調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR の PB・PB/EE スイッチ……PB • アライメントテープ RR5-1SD の カラーバー信号部を REW する。 • REF VIDEO IN ; Composite video 	CH-1 ; TP306/TBC-5 (P-3) GND ; E302/TBC-5 (N-1)  $A = 3.0 \pm 0.05 \text{ Vdc}$	● LV303/TBC-5 (N-4)

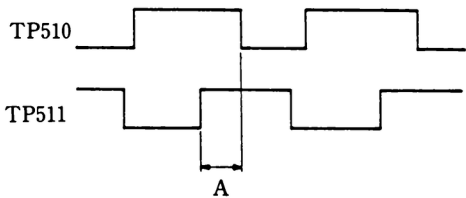
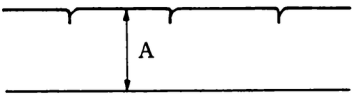
3-16. リターン SC オフセット調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	TP307/TBC-5 (P-1)  $A = 1.0 \pm 0.05 \text{ Vdc}$	● RV303/TBC-5 (N-1)

3-17. REF SYNC VCO 調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	CH-1 ; TP503/TBC-5 (C-3) GND ; E501/TBC-5 (E-4)  $A = 2.5 \pm 0.05 \text{ V}$	● LV501/TBC-5 (C-4)

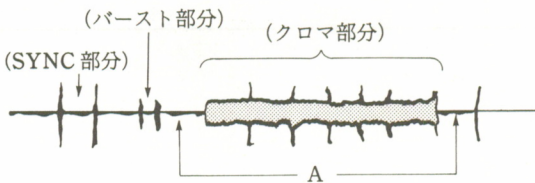
3-18. リードクロック VCO 調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	<p>Step 1 TP510/TBC-5 (F-2) TP511/TBC-5 (F-2)</p>  <p>$A = 150 \pm 5 \text{ ns}$</p> <p>Step 2 TP504/TBC-5 (F-4)</p>  <p>$A = 2.5 \pm 0.05 \text{ Vdc}$</p>	<p>● RV504/TBC-5 (H-2)</p> <p>● LV504/TBC-5 (H-2)</p>

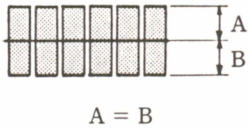
3-19. 内部リードクロック調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; 無信号 	<p>TP508/TBC-5 (D-2) GND ; E502/TBC-5 (B-1)</p> <p>$14318.18 \pm 0.01 \text{ kHz}$</p>	<p>● RV501/TBC-5 (G-4)</p>

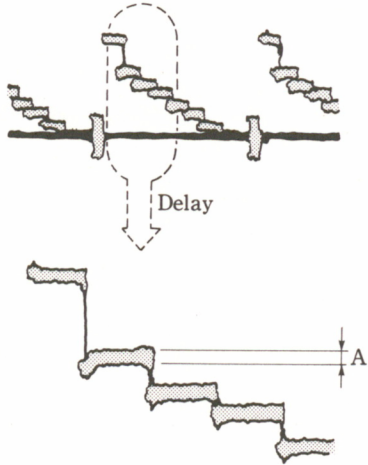
3-20. Beat 検出器調整

調 整 時 の 状 態	規 格	調 整 箇 所
<ul style="list-style-type: none"> • VTR のモード ; PB • REF VIDEO IN ; Composite video • アライメントテープ RR5-1SD のカラーバー信号部分を再生する 	<p>TP604/TBC-5 (A-5)</p>  <p>A 部 (Y 信号のみの部分) をフラットにする。</p>	<p>● RV605/TBC-5 (B-4) ● RV606/TBC-5 (A-4) 交互に調整する。</p>

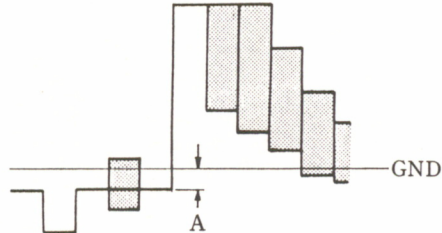
3-21. Beat オフセット調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; PB • REF VIDEO IN ; Composite video • アライメントテープ RR5-1SD のカラーバー信号部分を再生する 	TP601/TBC-5 (C-6)  $A = B$	⑦ RV601/TBC-5 (B-5)

3-22. Beat キャンセル調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • R699の両端をショートクリップで接続する • S601が ON であることを確認する • VTR のモード ; PB • REF VIDEO IN ; Composite video • アライメントテープ RR5-1SD のカラーバー信号部分を再生する。 • WAVE FORM MONITOR : RESPONSE=LUMINANCE • 調整後ショートクリップを取り去る 	VIDEO OUT 1 (75Ω 終端)  $A = \text{最小にする}$	⑦ RV602/TBC-5 (A-6) ⑦ RV603/TBC-5 (C-6) 交互に調整する。

3-23. Beat キャンセラーペDESTALレベル調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> • VTR のモード ; EE • VIDEO IN ; カラーバー • REF VIDEO IN ; Composite video 	TP602/TBC-5 (D-5)  $A = -0.075 \pm 0.075 \text{ Vdc}$	⑦ RV604/TBC-5 (D-5)

SECTION 3 ELECTRICAL ALIGNMENT

[Equipment required]

- Dual trace oscilloscope
- NTSC signal generator (TEKTRONIX1410 or equivalent)
- Vector scope (TEKTRONIX520 or equivalent)
- VTR (BVU-950)
- TBC Remote Controler (BVR-55)
- Frequency counter
- NTSC waveform monitor (TEKTRONIX 1750 or equivalent)
- Digital volt meter
- KSP cassette tape
- Alignment Tape : RR5-1SD (Part No. : 8-960-037-80)-SP tape

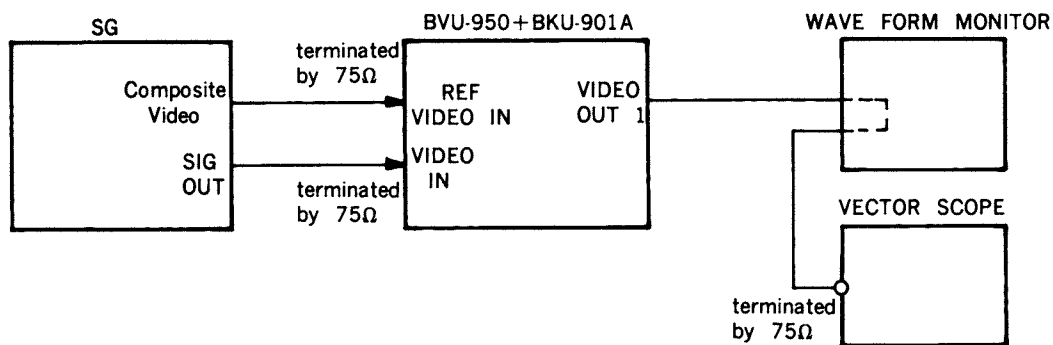
TIME	VIDEO	AUDIO	TIME CODE
5	color bars	————	———
3	Gated sweep (B/W)	1 kHz, 0 dB	———
3	Gated sweep (color)	10 kHz, -10 dB	———
3	Pulse & bar (color) (MOD 12.5T and inverted 2T)	1kHz, -20dB (NR: OFF) 40Hz, -20dB(NR: OFF) 7kHz, -20dB(NR : OFF) 10kHz, -20dB(NR: OFF) 15kHz, -20dB(NR: OFF)	———
2	Pulse & bar (B/W) (MOD 12.5T and inverted 2T)	1kHz, -20dB(NR: ON) 15kHz, -20dB(NR: ON)	———
2	Monoscope (color)	————	———
2	Pseudo color bars	————	TIME CODE

○ BVU-950 switch setting

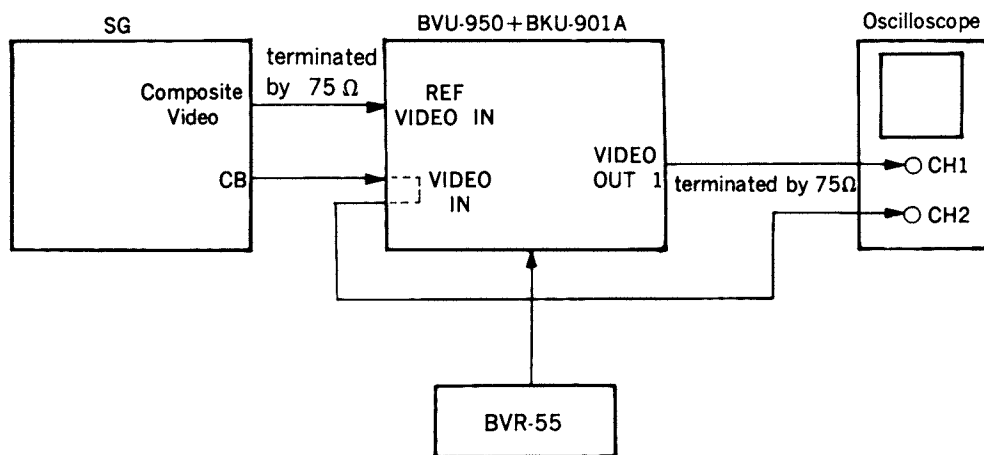
VIDEO IN 75 Ω terminationON
 REF VIDEO IN 75 Ω terminationON
 SERVO LOCKAUTO
 FRAMINGON
 EXT TBCOFF

INT TBCON

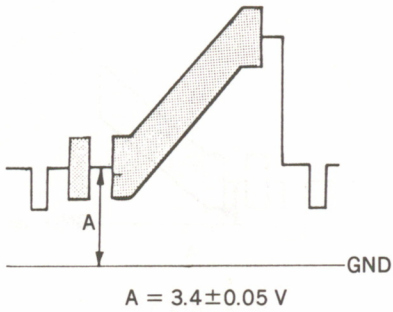
[CONNECTION 1]



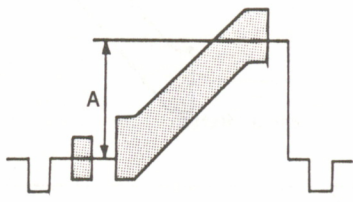
[CONNECTION 2]



3-1. INPUT PEDESTAL LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; Ramp linearity • REF VIDEO IN connector; composite video • Put the unit into EE mode 	CH-1; TP101/TBC-5(N-7) GND; E102/TBC-5(N-7)  $A = 3.4 \pm 0.05 \text{ V}$	● RV102/TBC-5(P-7)

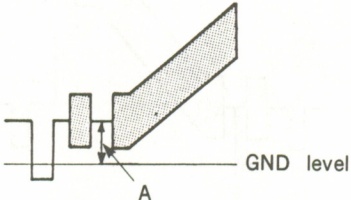
3-2. Y A/D INPUT LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; Ramp linearity • REF VIDEO IN connector; composite video • Put the unit into EE mode 	CH-1; TP101/TBC-5(N-7) GND; E102/TBC-5(N-7)  $A = 1.1 \pm 0.02 \text{ V}$	● RV103/TBC-5(R-7)

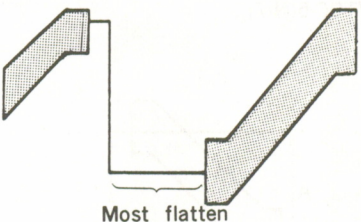
3-3. A/D CONVERTER REFERENCE VOLTAGE ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • Put the unit into EE mode • Measure the dc voltage with digital volt meter 	⊕ terminal; TP103/TBC-5(N-5) ⊖ terminal; E102/TBC-5(N-7) $3 \pm 0.05 \text{ Vdc}$	● RV101/TBC-5(P-5)

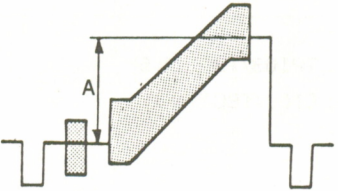
3-4. OUTPUT CLAMP LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; Ramp linearity • REF VIDEO IN connector; composite video • Put the unit into EE mode 	CH-1; TP702/TBC-5(G-5) GND; E702/TBC-5(H-7) <div style="text-align: center;">  <p>A = 50 ± 5 mV</p> </div>	Ⓐ RV705/TBC-5(F-7)

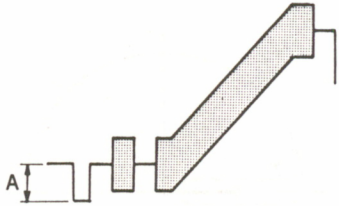
3-5. BLANKING LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; Ramp linearity • REF VIDEO IN connector; composite video • Put the unit into EE mode 	TP701/TBC-5(E-6) <div style="text-align: center;">  <p>Most flatten</p> </div>	Ⓐ VR-1(IC711)/TBC-5(H-6) <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> IC 711 <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; position: relative;"> VR-1 </div> <div style="border: 1px solid black; width: 20px; height: 20px; position: relative;"> Ⓐ </div> </div> </div>

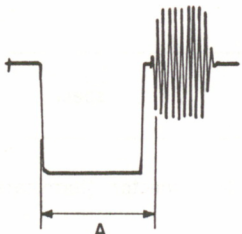
3-6. Y OUTPUT LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; Ramp linearity • REF VIDEO IN connector; composite video • Put the unit into EE mode 	VIDEO OUT 1 connector (terminated by 75Ω) <div style="text-align: center;">  <p>A = 100 ± 1 IRE</p> </div>	Ⓐ RV701/TBC-5(G-5)

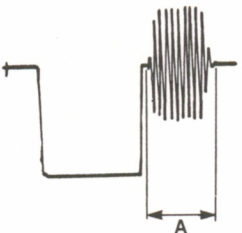
3-7. SYNC LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; Ramp linearity • REF VIDEO IN connector; composite video • Put the unit into EE mode 	VIDEO OUT 1 connector (terminated by 75 Ω)  $A = 40 \pm 0.5 \text{ IRE}$	⚙ RV708/TBC-5(E-6)

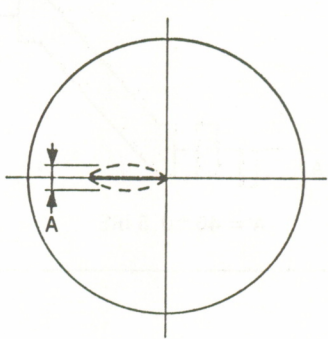
3-8. BURST POSITION ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • No signal is supplied to the REF VIDEO IN connector • Put the unit into EE mode 	VIDEO OUT 1 connector (terminated by 75 Ω)  $A = 5.4 \pm 0.2 \mu\text{s}$	⚙ RV703/TBC-5(F-5)

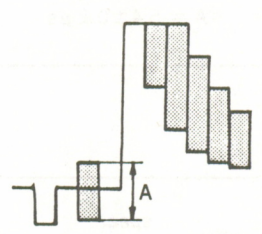
3-9. BURST WIDTH ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • No signal is supplied to the REF VIDEO IN connector • Put the unit into EE mode 	VIDEO OUT 1 connector (terminated by 75 Ω)  $A = 2.52 \pm 0.28 \mu\text{s}$	⚙ RV704/TBC-5(E-4)

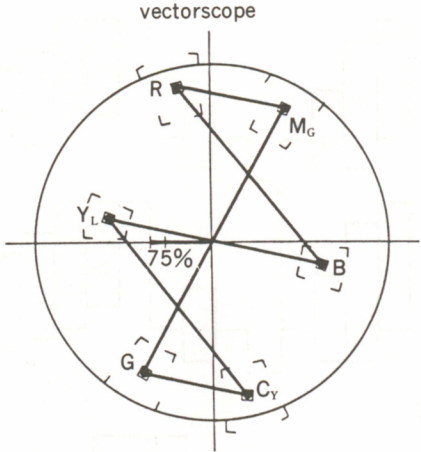
3-10. BURST TUNING ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into EE mode • Vector scope 	<p>VIDEO OUT 1 connector (terminated by 75 Ω)</p>  <p>$A \rightarrow 0$ (Straight the locus of the burst)</p>	<p>⌚ LV701/TBC-5(E-6)</p>

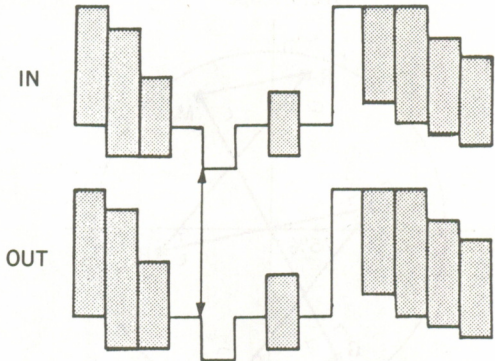
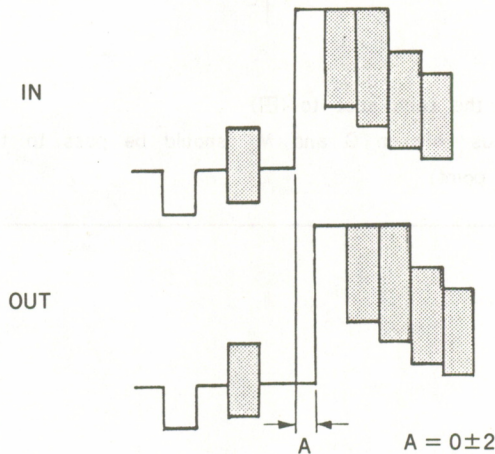
3-11. BURST LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into EE mode 	<p>VIDEO OUT 1 connector (terminated by 75 Ω)</p>  <p>$A = 40 \pm 0.5 \text{ IRE}$</p>	<p>⌚ RV503/TBC-5(D-4)</p>

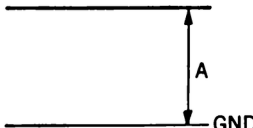
3-12. CHROMA LEVEL/HUE ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into PB mode • Insert the KSP cassette tape and play back the self-recorded portion. 	<p>VIDEO OUT 1 connector (terminated by 75 Ω)</p> <p>vectorscope</p>  <p>Adjust the each spot to (⊠) (A locus between G and M_G should be pass to the center point)</p>	<ul style="list-style-type: none"> • chroma level adj. ⦿ RV104/TBC-5(S-7) • HUE adj. ⦿ RV301/TBC-5(S-2)

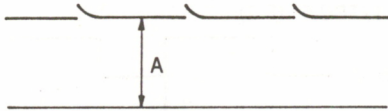
3-13. VIDEO PHASE ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video (Refer to [Connection 2]) • Put the unit into EE mode 	<p>Step 1.</p> <p>Adjust the VIDEO IN/OUT SYNC phase by SYNC phase of BVR-55.</p>  <p>IN</p> <p>OUT</p> <p>Step 2.</p>  <p>IN</p> <p>OUT</p> <p>A</p> <p>$A = 0 \pm 20 \text{ ns}$</p>	<p>RV302/TBC-5 (T-3)</p>

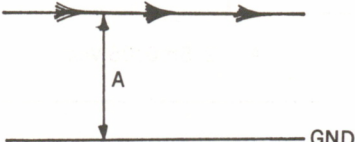
3-14. COLOR MODE WRITE CLOCK VCO ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • No signal is supplied to the REF VIDEO IN connector • Put the unit into EE mode 	<p>CH-1; TP304/TBC-5(P-3)</p> <p>GND; E302/TBC-5(N-1)</p>  <p>A</p> <p>GND</p> <p>$A = 2.8 \pm 0.05 \text{ V}$</p>	<p>LV302/TBC-5(P-4)</p>

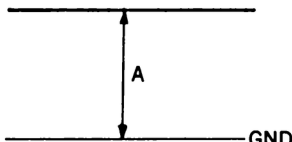
3-15. B/W MODE WRITE CLOCK VCO ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • PB • PB/EE switch on VTR: PB • REF VIDEO IN connector; composite video • Rewind the color bars signal portion of the alignment tape RR5-1SD 	CH-1; TP306/TBC-5(P-3) GND; E302/TBC-5(N-1)  $A = 3.0 \pm 0.05 \text{ Vdc}$	⚙️ LV303/TBC-5(N-4)

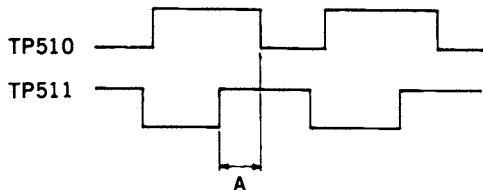
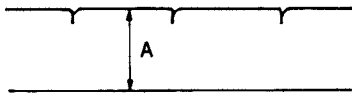
3-16. RETURN SC OFFSET ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into EE mode 	TP307/TBC-5 (P-1)  $A = 1.0 \pm 0.05 \text{ Vdc}$	⚙️ RV303/TBC-5 (N-1)

3-17. REF SYNC VCO ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into EE mode 	CH-1; TP503/TBC-5(C-3) GND; E501/TBC-5(E-4)  $A = 2.5 \pm 0.05 \text{ V}$	⚙️ LV501/TBC-5(C-4)

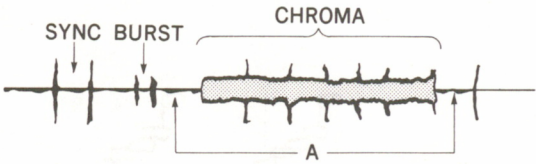
3-18. READ CLOCK VCO ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into EE mode 	<p>Step 1 TP510/TBC-5 (F-2) TP511/TBC-5 (F-2)</p>  <p>A = 150 ± 5 ns</p> <p>Step 2 TP504/TBC-5 (F-4)</p>  <p>A = 2.5 ± 0.05 Vdc</p>	<p>RV504/TBC-5 (H-2)</p> <p>LV504/TBC-5 (H-2)</p>


3-19. INTERNAL READ CLOCK ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • No signal is supplied to the REF VIDEO IN connector • Put the unit into EE mode 	<p>TP508/TBC-5(D-2) GND; E502/TBC-5(B-1)</p> <p>14318.18 \pm 0.01 kHz</p>	<p>RV501/TBC-5(G-4)</p>

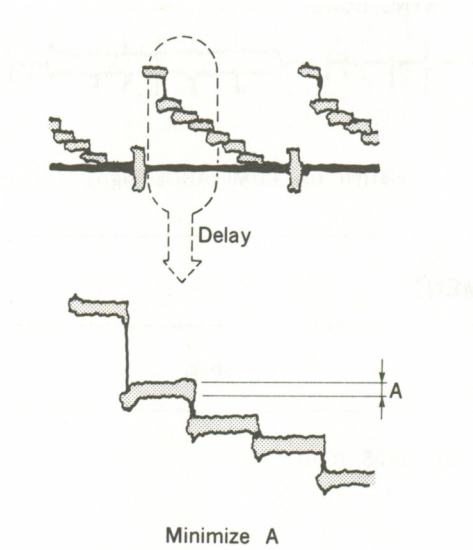
3-20. BEAT DETECTOR ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • REF VIDEO IN connector; composite video • Put the unit into PB mode • Play back the color bars signal portion of the alignment tape RR5-1SD. 	<p>TP604/TBC-5 (A-5)</p>  <p>Flatten the LUMINANCE signal portion</p>	<ul style="list-style-type: none"> ⌚ RV605/TBC-5 (B-4) ⌚ RV606/TBC-5 (A-4) <p>Adjust by turns.</p>

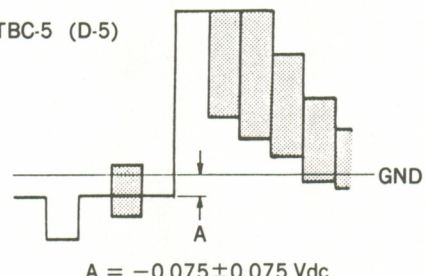
3-21. BEAT OFFSET ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • REF VIDEO IN connector; composite video • Put the unit into PB mode • Play back the color bars signal portion of the alignment tape RR5-1SD. 	<p>TP601/TBC-5 (C-6)</p>  <p>A = B</p>	<ul style="list-style-type: none"> ⌚ RV601/TBC-5 (B-5)

3-22. BEAT CANCEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • REF VIDEO IN connector; composite video • Put the unit into PB mode • Play back the color bars signal portion of the alignment tape RR5-1SD. • WAVE FORM MONITOR ; RESPONSE=LUMINANCE • Connect the both ends of R699 with a shorting clip. • Confirm the S601 is set to ON. • After the adjustment is complet- ed, remove the shorting clip. 	<p>VIDEO OUT 1 connector (terminated by 75 Ω)</p>  <p>Minimize A</p>	<ul style="list-style-type: none"> ● RV602/TBC-5 (A-6) ● RV603/TBC-5 (C-6) <p>Adjust by turns.</p>

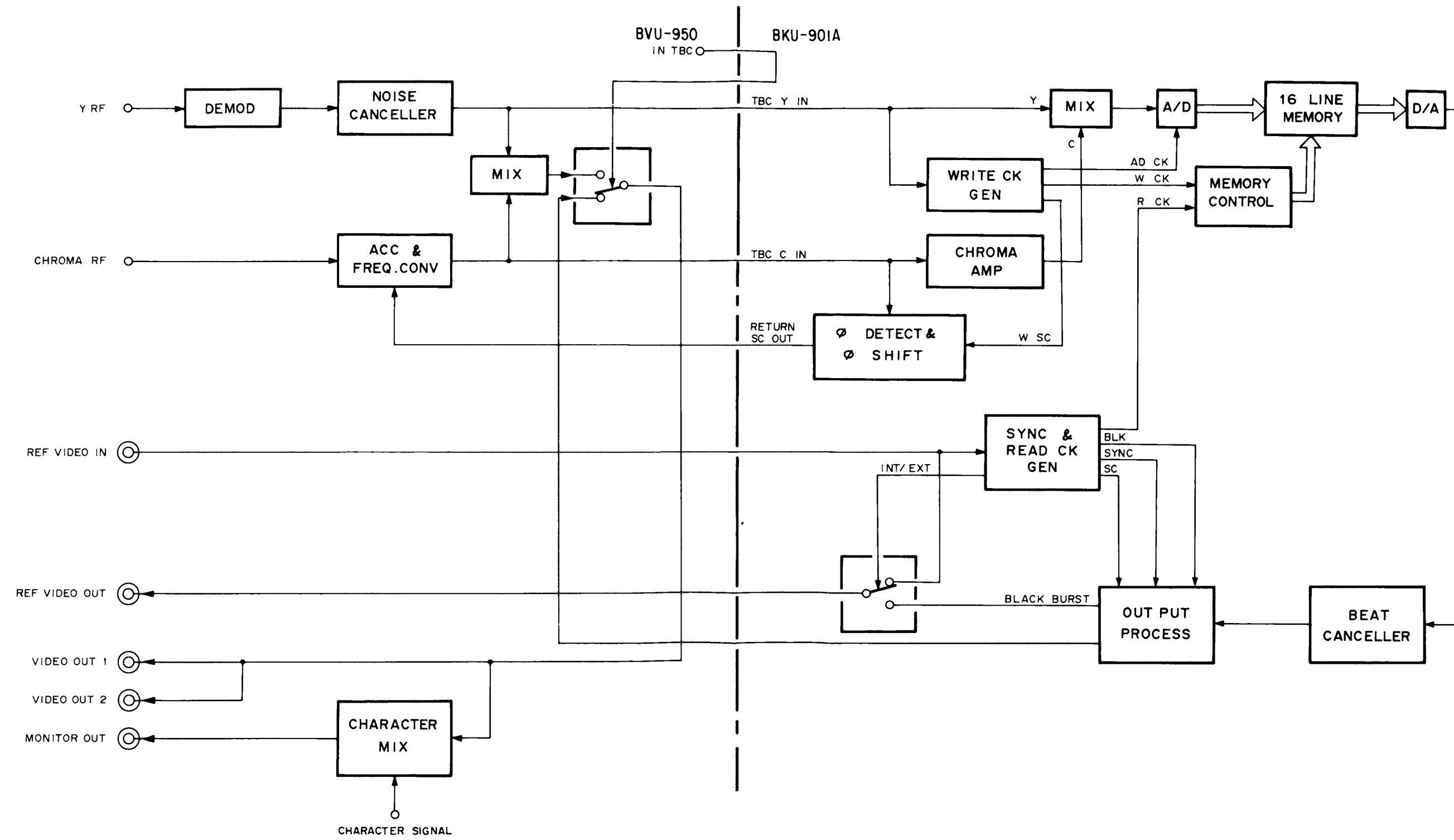
3-23. BEAT CANCELLER PEDESTAL LEVEL ADJUSTMENT

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"> • VIDEO IN connector; color bars signal • REF VIDEO IN connector; composite video • Put the unit into EE mode 	<p>TP602/TBC-5 (D-5)</p>  <p>$A = -0.075 \pm 0.075 \text{ Vdc}$</p>	<ul style="list-style-type: none"> ● RV604/TBC-5 (D-5)

SECTION 4 BLOCK DIAGRAMS

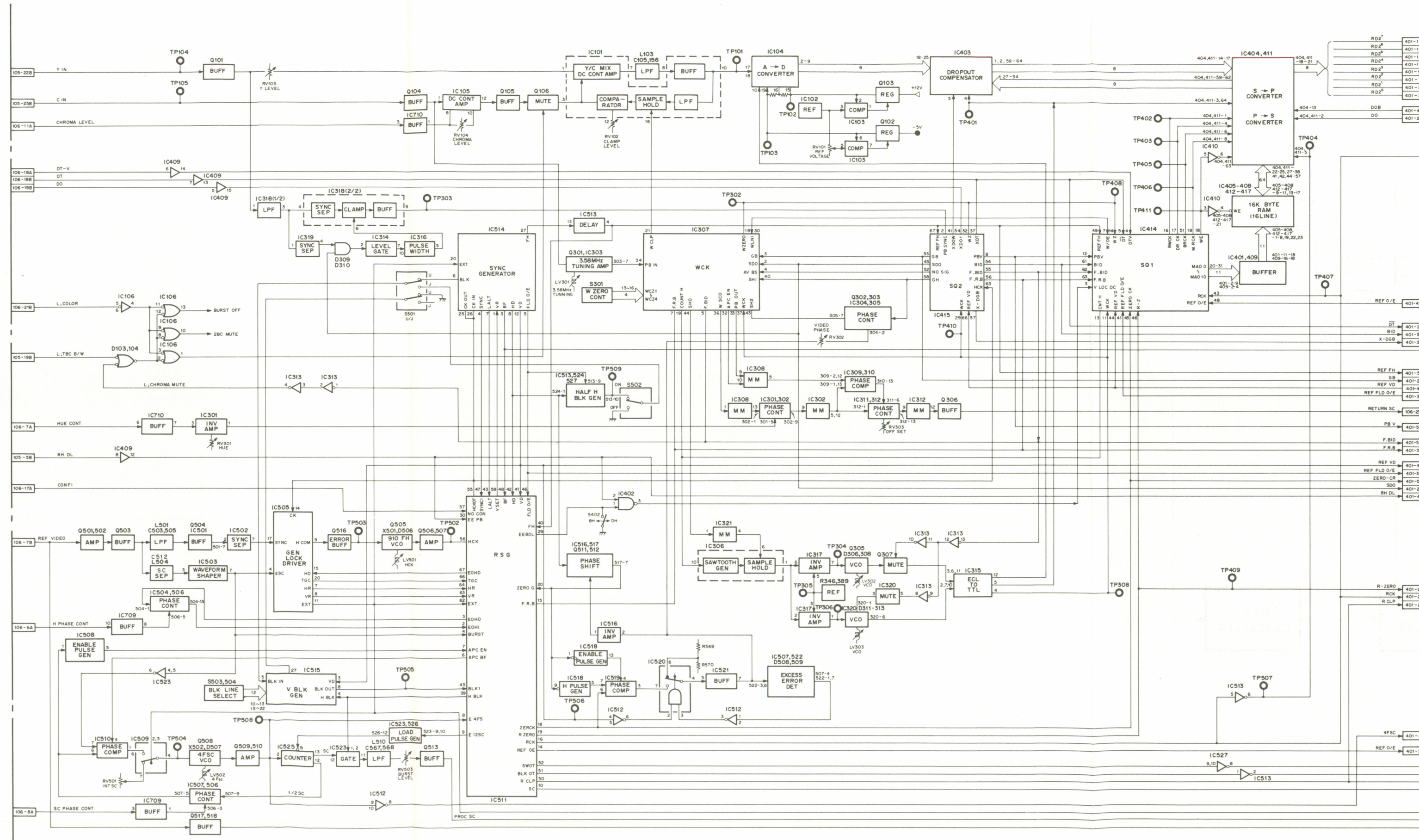
SIGNAL FLOW CHART

SIGNAL FLOW CHART

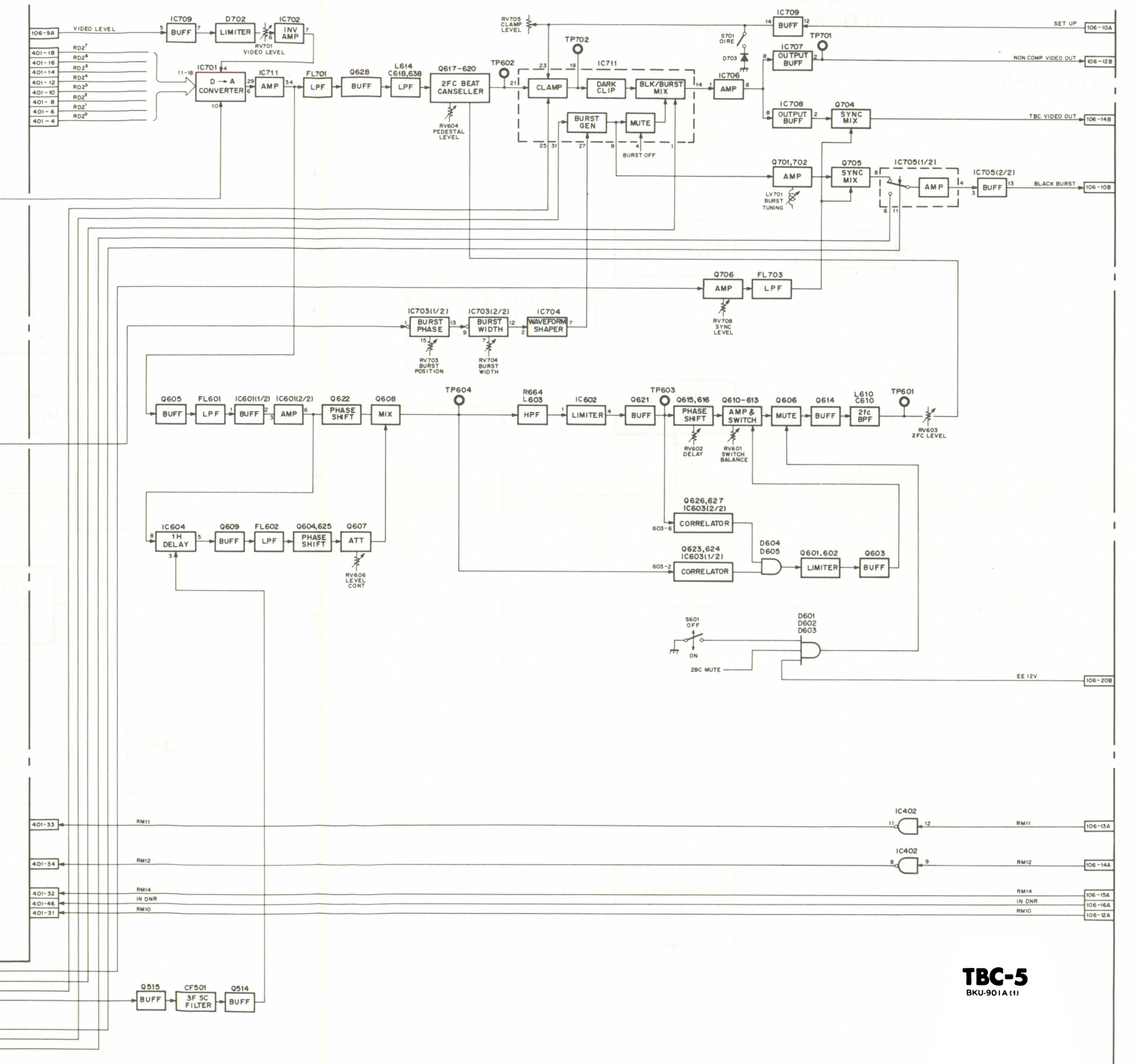


TIME BASE CORRECTOR

TIME BASE CORRECTOR TIME BASE CORRECTOR



TIME BASE CORRECTOR TIME BASE CORRECTOR



TBC-5
BKU-901A(1)

SECTION 5

SEMICONDUCTOR ELECTRODES

ここに記載されているIC、トランジスタ、ダイオードは、それぞれの機能を等価的に表わしたものです。したがって互換性を表わすものではありません。(互換性のない型名が併記されている事もあります。)部品の交換をする時は、SPARE PARTSの章を参照して下さい。

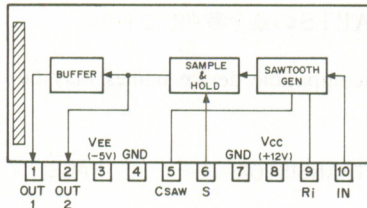
ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

IC	PAGE	IC	PAGE	TRANSISTOR	PAGE
BX1461	5-2	SN74HC541NS	5-10	2SA1015	5-13
BX365AL	5-2	SN74LS00N	5-11	2SA1048	5-13
BX366A	5-2	SN74LS04N	5-11	2SA1115	5-13
BX366AL	5-2	SN74LS06N	5-11	2SA1175	5-13
BX381L	5-2	SN74LS123N	5-11	2SA844	5-13
BX389L	5-2	SN74LS163AN	5-11	2SC1815	5-13
		SN74LS221N	5-11	2SC2458	5-13
CX20158	5-2			2SC2603	5-13
CX20162	5-2	TA7060AP	5-12	2SC2785	5-13
CX23065	5-3	TA7357AP	5-12	2SC2786	5-13
CX7930A	5-3	TC74HC00P	5-12	2SC2901	5-13
CX7998	5-5	TC74HC123P	5-12	2SD773	5-13
CXD1020Q	5-7	TL082CP	5-12	2SK523	5-13
CXD1022CQ	5-5	TL431CLP	5-12		
CXD1023AQ	5-5	TL601CP	5-12	DIODE	PAGE
CXD1024Q	5-7			1SS119	5-13
CXD1045Q	5-8	μ PC324C	5-9	1SS133	5-13
CXL5001P	5-8	μ PC393C	5-10	1SS97	5-13
		μ PC4082C	5-12	1SS99	5-13
HD10116	5-9	μ PC4558C	5-10		
HD10125	5-9	μ PC78M05H	5-12	FC51M	5-13
		μ PC79M05H	5-12	FC54M	5-13
M5109P	5-9				
MB3614	5-9				
MB4001P	5-9				
MB4002	5-9				
MB40578P	5-9				
MB40778P	5-9				
MC1496P	5-10				
MC74HC541N	5-10				
NJM2903D	5-10				
NJM4558D	5-10				
NJM78L09A	5-10				
NJM78M05A	5-10				
NJM79M05A	5-10				

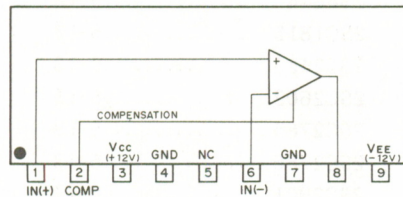
等価回路はICメーカーのData Bookに従いました。

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

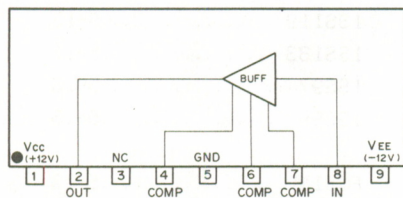
BX1461 (SONY)
PHASE DETECTOR
— PRINTED SIDE —



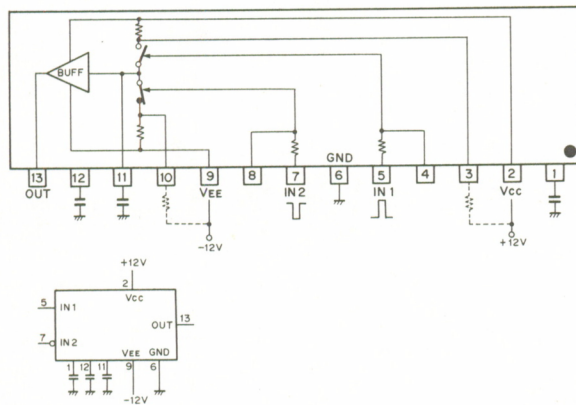
BX365AL (ROHM)
VIDEO AMPLIFIER
— SIDE VIEW —



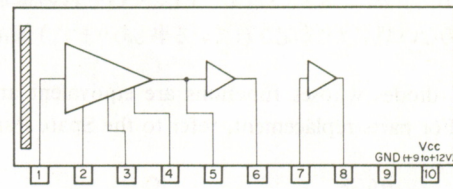
BX366A (SONY)
BX366AL (ROHM)
VIDEO BUFFER
— SIDE VIEW —



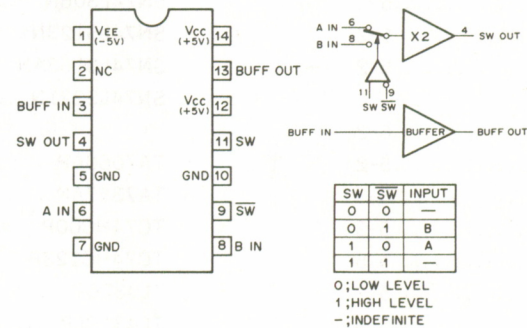
BX381L (ROHM)
PHASE COMPARATOR
— SIDE VIEW —



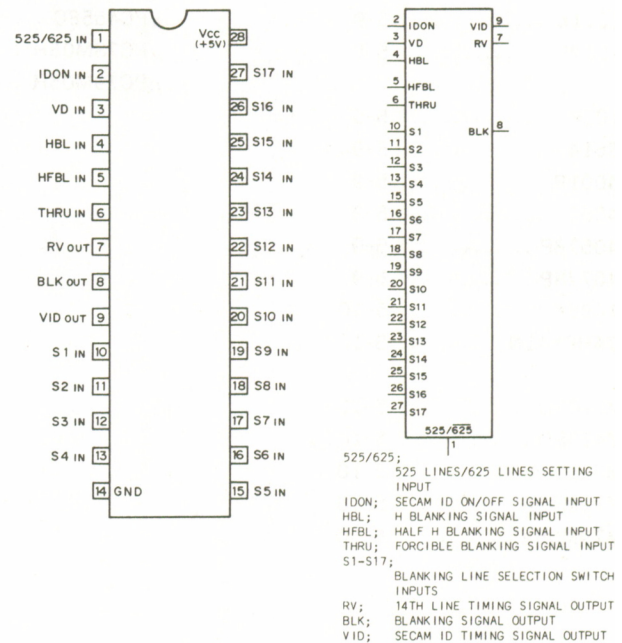
BX389L (ROHM)
VIDEO AMPLIFIER
— PRINTED SIDE —



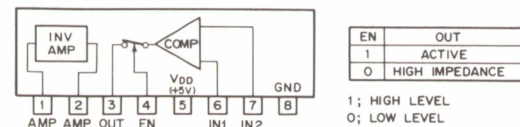
CX20158 (SONY)
VIDEO SWITCHER AND BUFFER
— TOP VIEW —



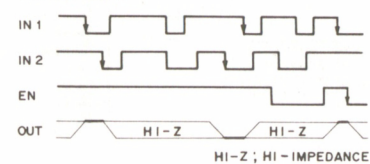
CX20162 (SONY)
BIPOlar/TTL VERTICAL BLANKING WIDTH CONTROLLER
— TOP VIEW —



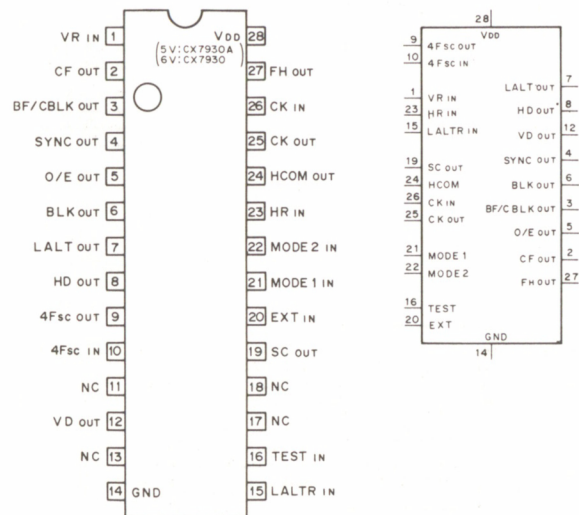
CX23065 (SONY)
N-MOS PHASE COMPARATOR WITH INVERSION AMPLIFIER
— PRINTED SIDE VIEW —



TIMING CHART



CX7930A (SONY) FLAT PACKAGE
C-MOS SYNC GENERATOR (NTSC, PAL-M, PAL, SECAM)
— TOP VIEW —

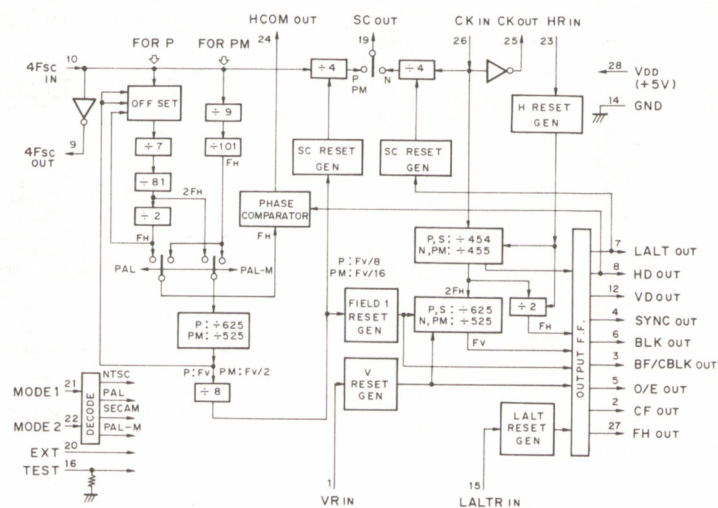


O/E : ODD/EVEN FIELD
CF : COLOR FRAME PULSE
HCOM : H COMPARATOR

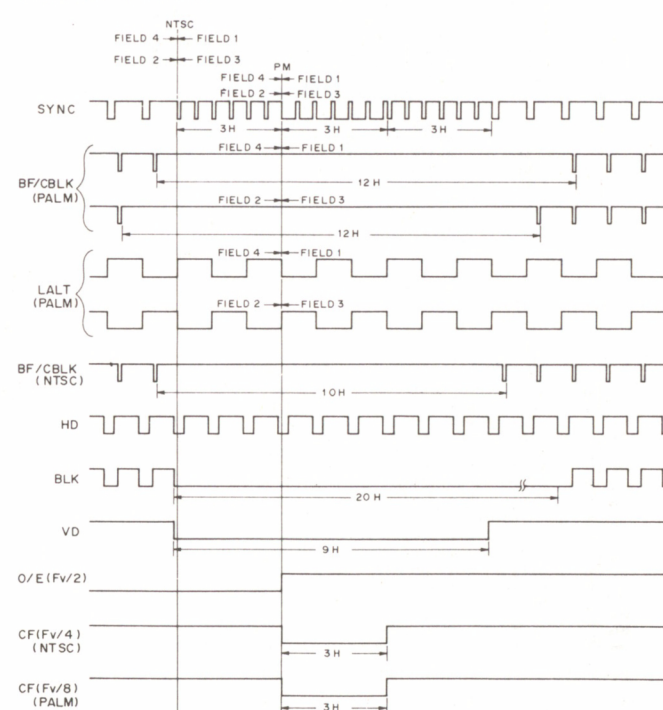
SYSTEM	4Fsc	CLOCK
NTSC	910 Fh	910 Fh
PAL	1135 Fh+2Fv	908 Fh
PALM	909 Fh	910 Fh
SECAM		908 Fh

0 ; LOW LEVEL (GND)
1 ; HIGH LEVEL (VDD)

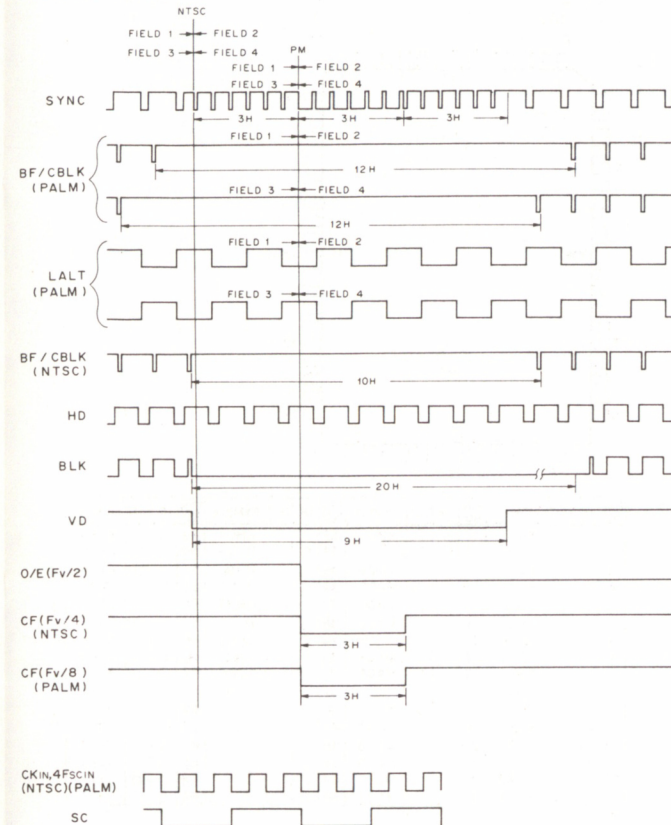
TEST '0' OPEN
(INTERNALLY PULLED DOWN)



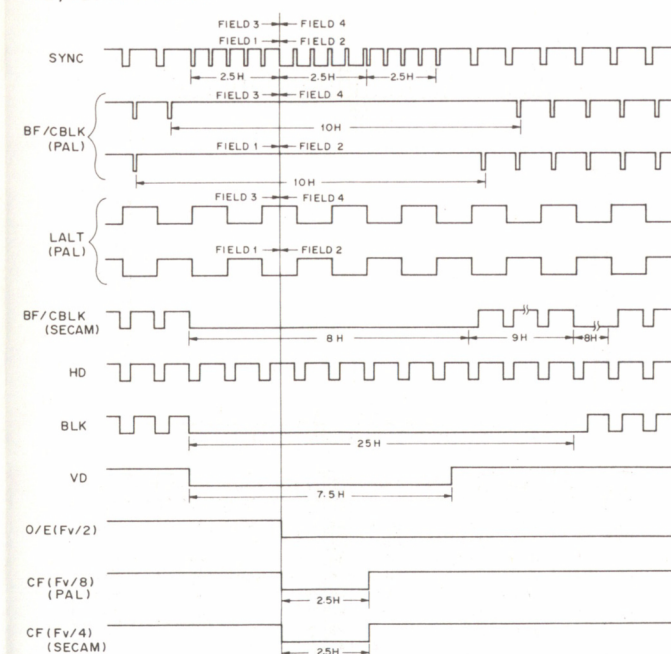
NTSC, PAL-M (FIELD 1,3)



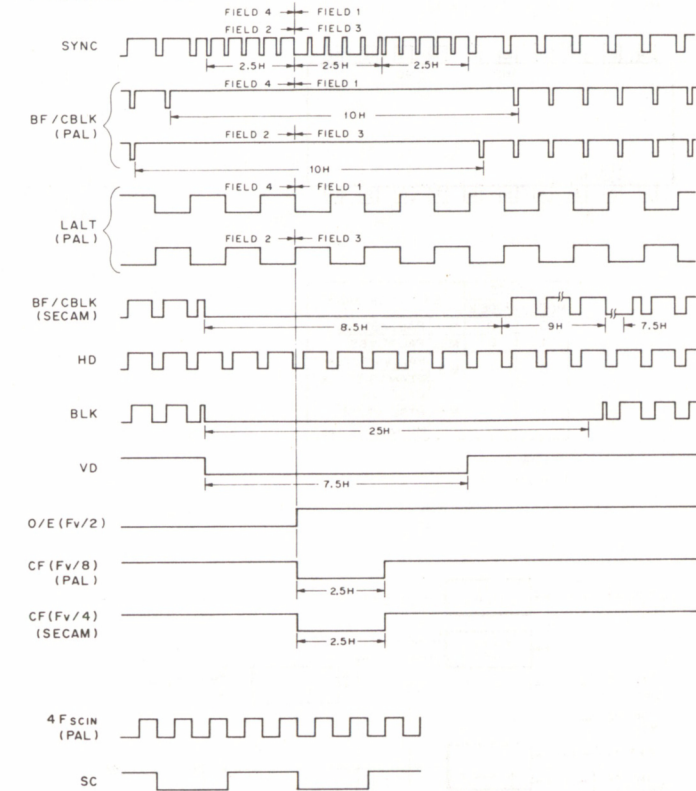
NTSC, PAL-M (FIELD 2,4)



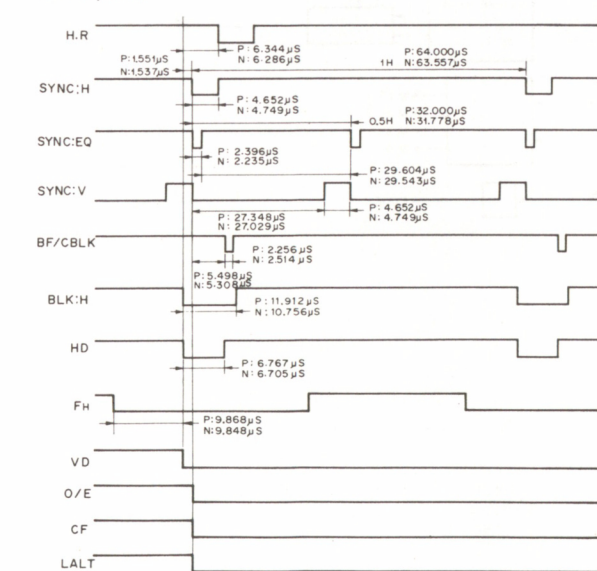
PAL, SECAM (FIELD 4,2)

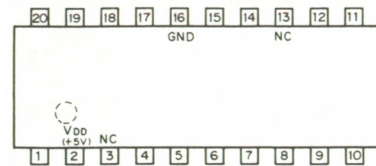


PAL, SECAM (FIELD 1,3)

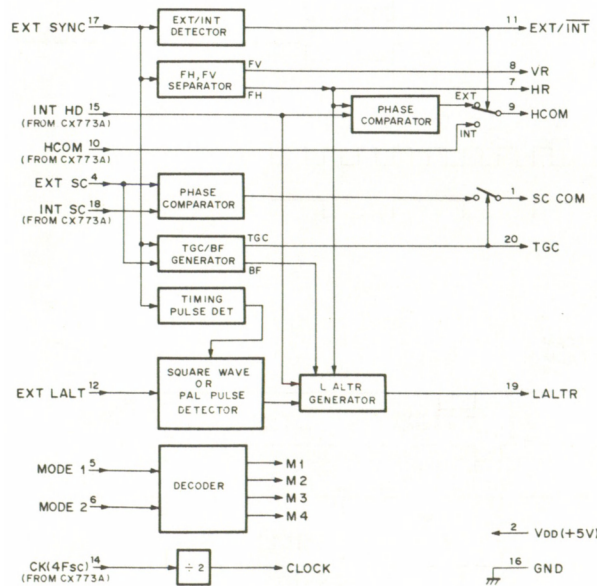
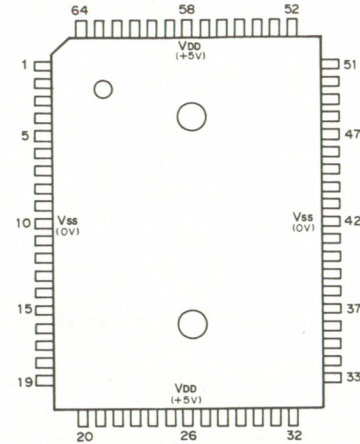


P: PAL, SECAM
N: NTSC, PALM

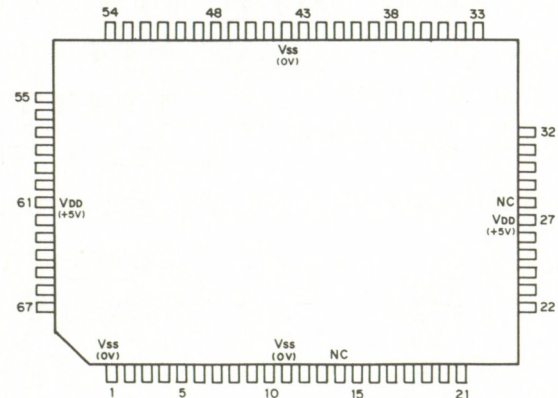


CX7998 (SONY) FLAT PACKAGE
C-MOS GENLOCK DRIVER FOR CX773A
— TOP VIEW —

INPUTS		EXT LOCK MODE	
MODE 1	MODE 2	M 1	M 2
0	0	M 1	PAL:VBS
1	0	M 2	PAL:M:VBS
0	1	M 3	PAL:VS/SC/LALT
1	1	M 4	SECAM:VS/SC/LALT
			NTSC:VBS
			NTSC:VS/SC
			PAL:M:VS/SC/LALT

0; LOW LEVEL
1; HIGH LEVELCXD1022CQ (SONY) FLAT PACKAGE
C-MOS TBC
— TOP VIEW —

PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			XCLR	17			XRDO	33			XRFB	49			XRFB
2			XHDL	18			XWZ	34			HYCL	50			XARE
3			XVDL	19			XRMA	35			HUBL	51			RCK
4			XDTV	20			MA00	36			H13V	52			IDIR
5			XDT	21			MA01	37			H8HA	53			ODIR
6			WNI	22			MA02	38			MOD1	54			XVUP
7			WOE	23			MA03	39			MOD2	55			XCDN
8			TST1	24			MA04	40			HEE	56			CFRM
9			TST2	25			MA05	41			FLOE	57			XVSF
10			VSS	26			VSS	42			VDD	58			VDD
11			XPBV	27			MA06	43			XRVD	59			IMJP
12			CNTH	28			MA07	44			WOE	60			CMJP
13			XAWZ	29			MA08	45			61				XBID
14			WBCK	30			MA09	46			62				XBID
15				31			MA10	47			63				XRFB
16				32			MA11	48			64				XJST

CXD1023AQ (SONY) FLAT PACKAGE
C-MOS TBC
— TOP VIEW —

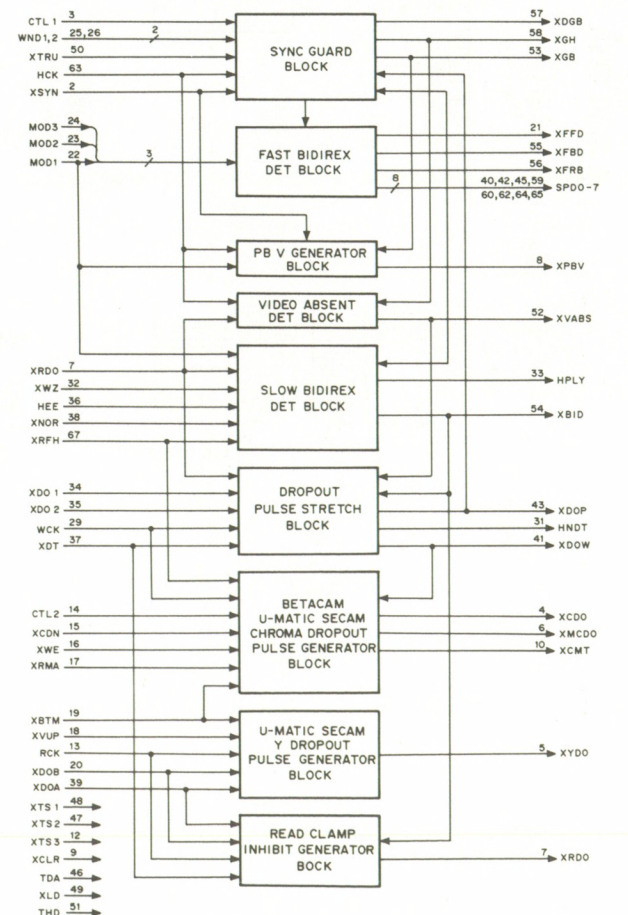
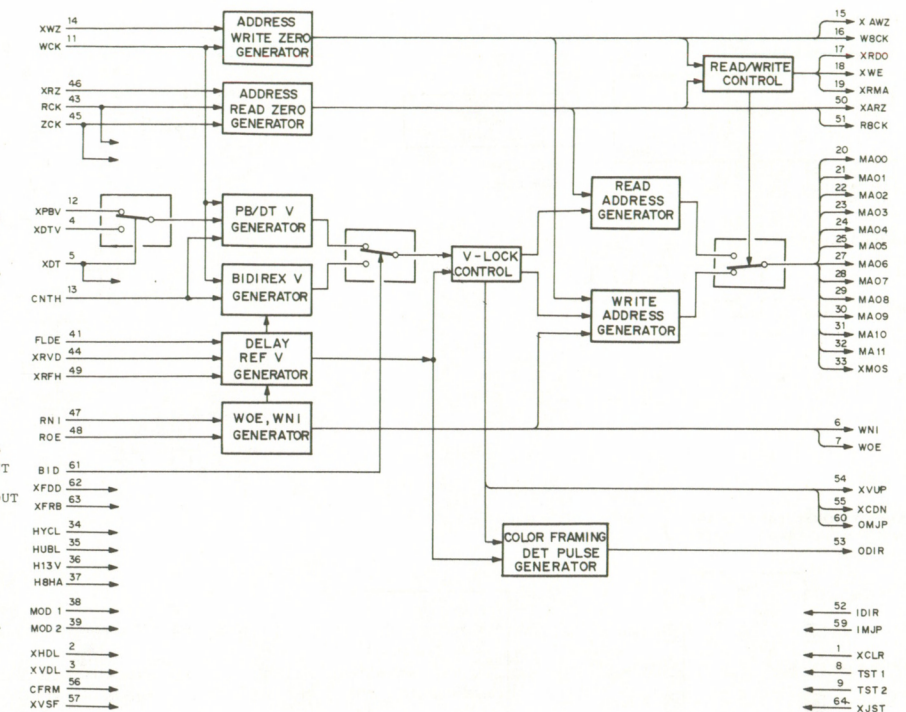
PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			VSS	21			XFFD	41			XDOW	61			VDD
2			XSYN	22			MOD1	42			SPD6	62			SPD2
3			CTL1	23			MOD2	43			XDOP	63			HCK
4			XCDO	24			MOD3	44			VSS	64			SPD1
5			XYDO	25			WND1	45			SPD5	65			SPD0
6			XMCD0	26			WND2	46			TDA	66			XRVD
7			XRDO	27			VDD	47			XTS1	67			XRFB
8			XPBV	28			WCK	48			XTS2				
9			XCLR	29			—	49			XLD				
10			XCMT	30			—	50			XTRU				
11			VSS	31			HNDT	51			THD				
12			XTS3	32			XWZ	52			XVABS				
13			RCK	33			HPLY	53			XGB				
14			CTL2	34			XDO1	54			XBID				
15			XCDN	35			XDO2	55			XFB				
16			XWE	36			HEE	56			XRFB				
17			XRMA	37			XDT	57			XDGB				
18			XVUP	38			XNOR	58			XGH				
19			XBTM	39			XDOA	59			SPD4				
20			XDOB	40			SPD7	60			SPD3				

PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			XCLR	17			XRDO	33			XRFB	49			XRFB
2			XHDL	18			XWZ	34			HYCL	50			XARE
3			XVDL	19			XRMA	35			HUBL	51			RCK
4			XDTV	20			MA00	36			H13V	52			IDIR
5			XDT	21			MA01	37			H8HA	53			ODIR
6			WNI	22			MA02	38			MOD1	54			XVUP
7			WOE	23			MA03	39			MOD2	55			XCDN
8			TST1	24			MA04	40			HEE	56			CFRM
9			TST2	25			MA05	41			FLOE	57			XVSF
10			VSS	26			VSS	42			VDD	58			VDD
11			XPBV	27			MA06	43			XRVD	59			IMJP
12			CNTH	28			MA07	44			WOE	60			CMJP
13			XAWZ	29			MA08	45			61				XBID
14			WBCK	30			MA09	46			62				XBID
15				31			MA10	47			63				XRFB
16				32			MA11	48			64				XJST

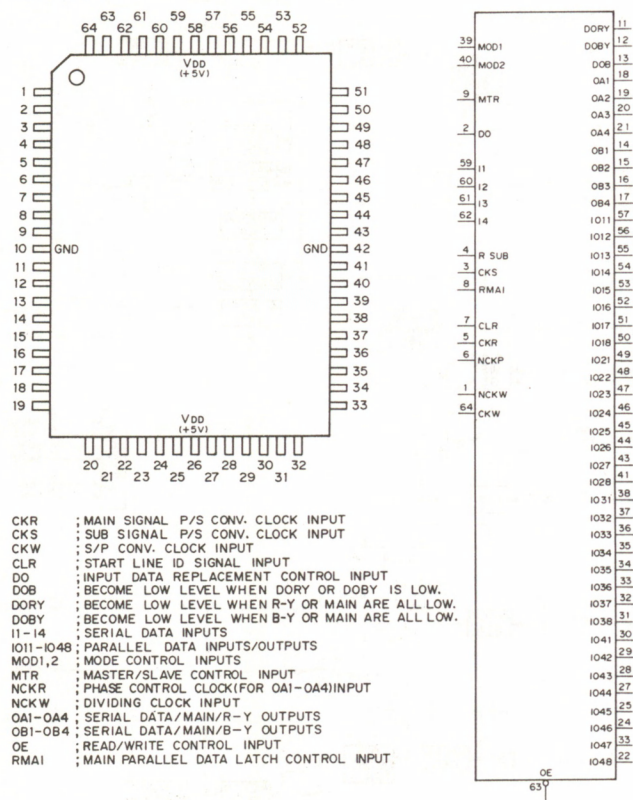
PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			VSS	21			XFFD	41			XDOW	61			VDD
2			XSYN	22			MOD1	42			SPD6	62			SPD2
3			CTL1	23			MOD2	43			XDOP	63			HCK
4			XCDO	24			MOD3	44			VSS	64			SPD1
5			XYDO	25			WND1	45			SPD5	65			SPD0
6			XMCD0	26			WND2	46			TDA	66			XRVD
7			XRDO	27			VDD	47			XTS1	67			XRFB
8			XPBV	28			WCK	48			XTS2				
9			XCLR	29			—	49			XLD				
10			XCMT	30			—	50			XTRU				
11			VSS	31			HNDT	51			THD				
12			XTS3	32			XWZ	52			XVABS				
13			RCK	33			HPLY	53			XGB				
14			CTL2	34			XDO1	54			XBID				
15			XCDN	35			XDO2	55			XFB				
16			XWE	36			HEE	56			XRFB				
17			XRMA	37			XDT	57			XDGB				
18			XVUP	38			XNOR	58			XGH				
19			XBTM	39			XDOA	59			SPD4				
20			XDOB	40			SPD7	60			SPD3				

CFRM; COLOR FRAMING IN
CNTH; COUNTER-H IN
FLOE; REF FIELD O/E IN
H13V; H; 13V-LOCK/
L; 15V-LOCK IN
H8HA; H; 8H ADVANCE/
L; 16H ADVANCE IN
HEE; H; EE OUT
HUBL; H; U-MATIC/
L; BETACAM IN
HYCL; H; Y-ch/L; C-ch IN
IDIR; H; DIRECT/
L; PROCESS IN
IMJP*; L; V-LOCK 2H-DELAY IN
MA00-11; MEMORY ADDRESS 2ⁿ-2ⁿ,
OUT
MOD1, 2*; MODE SELECT IN
ODIR*; COLOR FRAME ID DETECT
PULSE OUT
OMJP*; L; MEMORY JUMP OUT
RCK; READ 8 CLOCK OUT
RCDN; READ CLOCK IN
RNI; REF LINE N/I IN
ROE; REF LINE O/E
TST1, 2; TEST 1, 2 IN
WBCK; WRITE 8 CLOCK OUT
WCK; WRITE CLOCK IN
WNI; WRITE LINE N/I IN
WOE; WRITE LINE O/E
XARZ; ADDRESS READ ZERO OUT
XAWZ; ADDRESS WRITE ZERO OUT
XBID; L; BIDIREX IN
XCDN; L; C-ch V-LOCK DOWN OUT
XCLR; CLEAR IN
XDT; L; DT IN
XDTV; DT V-SYNC
XFB; L; FAST BIDIREX IN
XFRB; L; FAST REVERSE
BIDIREX IN
L; H DELAY IN
L; COMPOSITE IN
XJST; MEMORY ADDRESS 2ⁿ OUT
PB V-SYNC
XVUP; READ DO DATA OUT
XVDF; REF PH IN
XRMA; READ MAIN DATA OUT
XRVD; REF VD IN
XRZ; READ ZERO IN
XVDL; L; VIDEO DELAY IN
XVSF; L; V-LOCK SHIFT IN
XVUP; L; V-LOCK UP OUT
XWE; WRITE ENABLE OUT
XWZ; WRITE ZERO IN
ZCK; ZERO CLOCK IN

CTL1, 2; CTL1, 2 IN
HCK; 910 CLOCK IN
HEE; EE IN
HNDT; NORMAL PLAY/DT PLAY OUT
HPLY; PLAY OUT
MOD1; MODE 1 IN (525/625)
MOD2; MODE 2 IN (U-MATIC/BETACAM)
MOD3; MODE 3 IN (U-MATIC
+BETACAM)
RCK; READ CLOCK IN
SPD0; PLAYBACK SPEED 20 OUT
SPD7; PLAYBACK SPEED 27 OUT
TDA; TEST DATA IN
THD; TEST HD OUT
WCK; WRITE CLOCK IN
WNI, 2; SYNC GUARD WINDOW 1, 2 IN
XBID; BIDIREX IN/OUT
XBTH; BOTTOM LINE SIGNAL IN (SECAM)
XCDN; DROPOUT CHROMA 1H SHIFT DOWN IN
(SECAM)
XCDO; DROPOUT CHROMA PULSE OUT (SECAM)
XCLR; CLEAR IN
XCMT; CHROMA MUTE OUT (BETACAM ENCODER)
XDGB; DROPOUT PULSE OUT (BETACAM CHROMA)
XDOL, 2; DROPOUT PULSE 1, 2 IN
XDOL, B; READ SIDE DROPOUT PULSE A, B IN
XDOP; DROPOUT PULSE STRETCH IN/OUT
XDOW; DROPOUT PULSE STRETCH IN/OUT
(NOR/DT PLAYBACK ONLY)
XDT; DT IN
XFB; FAST BIDIREX IN/OUT
XFP; F-PLAY OUT
XFRB; FAST REVERSE BIDIREX IN/OUT
XGB; GUARD BAND IN/OUT
XGH; GUARD H IN/OUT
XLD; TEST DATA LOAD IN
XMCD0; DROPOUT CHROMA MEMORY DATA IN/OUT
(SECAM)
XNOR; NORMAL FWD IN
XPBV; PB VIDEO OUT
XRDO; READ CLAMP INHIBIT SIGNAL OUT
XRFH; REF PH IN
XRMA; DROPOUT CHROMA OF MEMORY SIGNAL
IN (SECAM)
XRVD; REF VD IN
XSYN; PB SYNC IN
XTRU; SYNC GUARD THROUGH MODE IN
XTS1-3; TEST 1-3 IN
XVABS; VIDEO ABSENT IN/OUT
XVUP; V LOCK UP
XWE; WRITE IN
XWZ; WRITE ZERO IN
XYDO; DROPOUT Y PULSE OUT (SECAM)

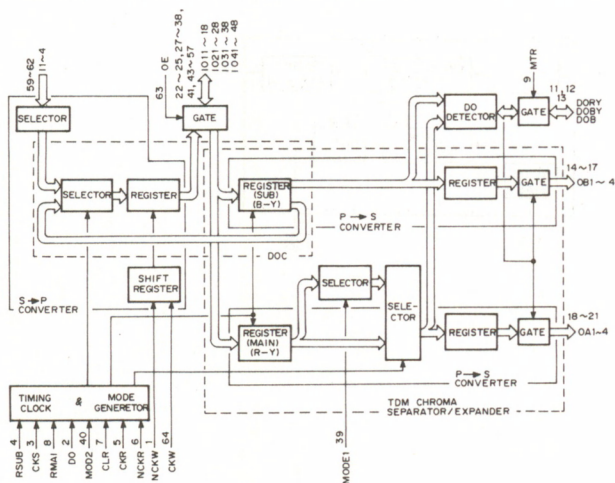


CXD1020Q (SONY)
C-MOS SERIAL-TO/FROM-PARALLEL CONVERTER
— TOP VIEW —

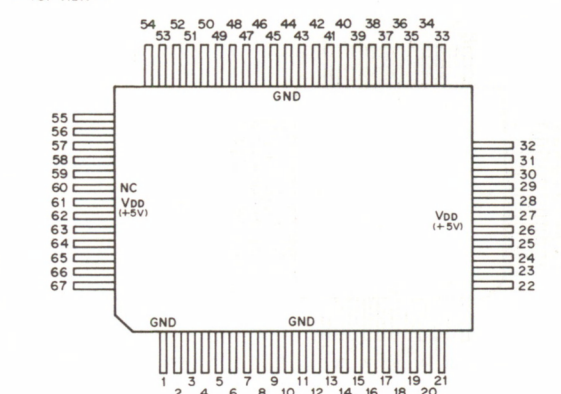


CKR : MAIN SIGNAL P/S CONV. CLOCK INPUT
CKS : SUB SIGNAL P/S CONV. CLOCK INPUT
CKW : S/P CONV. CLOCK INPUT
CLR : START LINE ID SIGNAL INPUT
DO : INPUT DATA REPLACEMENT CONTROL INPUT
DOBY : BECOME LOW LEVEL WHEN DORY OR DOBY IS LOW.
DORY : BECOME LOW LEVEL WHEN R-Y OR MAIN ARE ALL LOW.
DOBY : BECOME LOW LEVEL WHEN B-Y OR MAIN ARE ALL LOW.
11-14 : SERIAL DATA INPUTS
IO11-IO48 : PARALLEL DATA INPUTS/OUTPUTS
MOD1,2 : MODE CONTROL INPUTS
MTR : MASTER/SLAVE CONTROL INPUT
NCKR : PHASE CONTROL CLOCK (FOR OA1-OA4) INPUT
NCKW : DIVIDING CLOCK INPUT
OA1-OA4 : SERIAL DATA/MAIN/R-Y OUTPUTS
OB1-OB4 : SERIAL DATA/MAIN/B-Y OUTPUTS
OE : READ/WRITE CONTROL INPUT
RMAI : MAIN PARALLEL DATA LATCH CONTROL INPUT

PIN NO.	IN/OUT	PIN NAME	PIN NO.	IN/OUT	PIN NAME	PIN NO.	IN/OUT	PIN NAME	PIN NO.	IN/OUT	PIN NAME
1	I	NCKW	17	O	OB4	33	I/O	IO36	49	I/O	IO21
2	I	DO	18	O	OA1	34	I/O	IO35	50	I/O	IO18
3	I	CKS	19	O	OA2	35	I/O	IO34	51	I/O	IO17
4	I	R SUB	20	O	OA3	36	I/O	IO33	52	I/O	IO16
5	I	CKR	21	O	OA4	37	I/O	IO32	53	I/O	IO15
6	I	NCKR	22	I/O	IO48	38	I/O	IO31	54	I/O	IO14
7	I	CLR	23	I/O	IO47	39	I	MOD1	55	I/O	IO13
8	I	RMAI	24	I/O	IO46	40	I	MOD2	56	I/O	IO12
9	I	MTR	25	I/O	IO45	41	I/O	IO28	57	I/O	IO11
10	—	GND	26	—	VDD	42	—	GND	58	—	VDD
11	I/O	DORY	27	I/O	IO44	43	I/O	IO27	59	I	IO1
12	I/O	DOBY	28	I/O	IO43	44	I/O	IO26	60	I	IO2
13	I/O	DOB	29	I/O	IO42	45	I/O	IO25	61	I	IO3
14	O	OB1	30	I/O	IO41	46	I/O	IO24	62	I	IO4
15	O	OB2	31	I/O	IO38	47	I/O	IO23	63	I	IO5
16	O	OB3	32	I/O	IO37	48	I/O	IO22	64	I	CKW



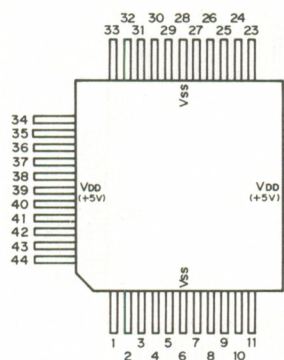
CXD1024Q (SONY)
C-MOS TIMING PULSE GENERATOR FOR TBC
— TOP VIEW —



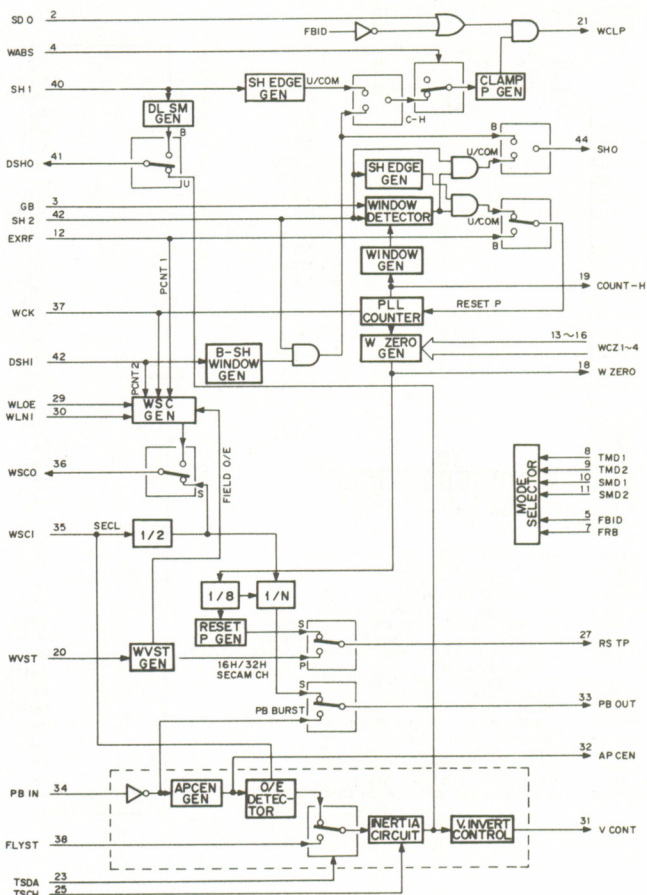
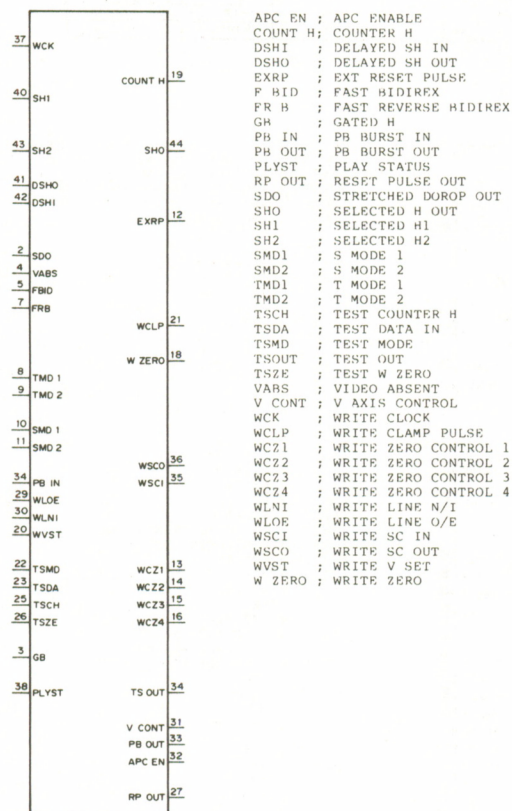
PIN NO.	IN/OUT	SYMBOL	PIN NO.	IN/OUT	SYMBOL	PIN NO.	IN/OUT	SYMBOL	PIN NO.	IN/OUT	SYMBOL
1	—	GND	18	O	ZEROK	35	O	WVCRZ	52	O	BFOUT
2	I	EOH1	19	O	RZERO	36	O	ADVVS	53	O	ESPLD
3	O	EOHO	20	I	ZEROG	37	I	ADVVD	54	O	ESPLD
4	I	BURST	21	O	E14CK	38	I	ADVFL	55	O	HCKOT
5	O	E45FE	22	I	MODE1	39	O	HBLK	56	I	HCKIN
6	O	APCBF	23	I	MODE2	40	I	FH	57	I	NOCON
7	I	APCEN	24	I	UB	41	I	VD	58	O	LALST
8	I	E4FS1	25	I	CNR	42	I	HD	59	O	V SET
9	O	E12SC	26	I	E816	43	I	ALT	60	—	VDD
10	O	SC	27	—	VDD	44	—	VSS	61	—	VDD
11	—	GND	28	I	TEST	45	I	BLK1	62	I	EXT
12	O	PSC	29	I	EEBOL	46	I	FLDOE	63	I	VR
13	O	REFNI	30	I	EEP8	47	I	SYNC1	64	I	HR
14	O	REFOE	31	I	SV2	48	I	BFIN	65	I	LALTR
15	I	FRB	32	I	SV1	49	I	DOP	66	I	TGC
16	O	ROK	33	I	REC	50	I	RCLP	67	O	EOHD
17	O	HRCR	34	I	AB	51	I	BLKOT			



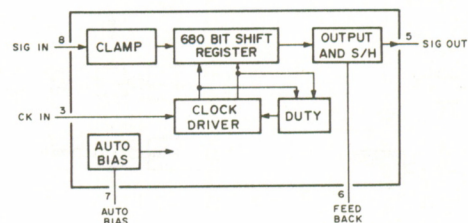
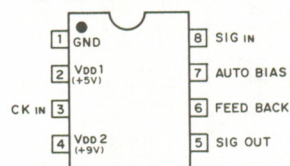
CXD1045Q (SONY)
C-MOS PLL COUNTER FOR TBC (WRITE CLOCK)
— TOP VIEW —



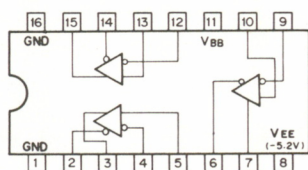
PIN NO./OUT	SYMBOL	PIN NO./OUT	SYMBOL	PIN NO./OUT	SYMBOL	PIN NO./OUT	SYMBOL
1	I VHS2	12	I EXRP	23	I TSDA	34	I PBIN
2	I SDO	13	I WCZ1	24	I TSOUT	35	I WSCI
3	I GB	14	I WCZ2	25	I TSCH	36	O WSCO
4	I VABS	15	I WCZ3	26	I TSZE	37	I WCK
5	I FBID	16	I WCZ4	27	O RPOUT	38	I PLYST
6	I Vss	17	I Vss	28	I Vss	39	I Vss
7	I FRB	18	O WZERO	29	I WLOE	40	I SH1
8	I TMD 1	19	O COUNT H	30	I WLN1	41	O DSHO
9	I TMD 2	20	I WVST	31	O V CONT	42	I DSHI
10	I SMD 1	21	O WCLP	32	O APC EN	43	I SH2
11	I SMD 2	22	I TSMD	33	O PBOUT	44	O SHO



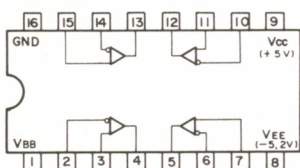
CXL5001P (SONY)
C-MOS CCD FOR NTSC 1H DELAY LINE
— TOP VIEW —



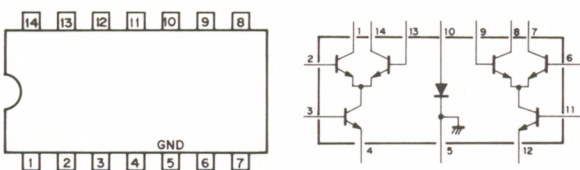
HD10116 (HITACHI)
ECL DIFFERENTIAL OR/NOR LINE RECEIVER
— TOP VIEW —



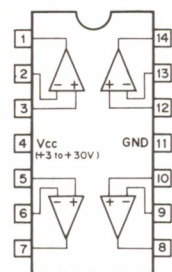
HD10125 (HITACHI)
ECL ECL-TO-TTL TRANSLATOR
— TOP VIEW —



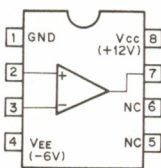
M5109P (MITSUBISHI)
DIFFERENTIAL AMPLIFIER
— TOP VIEW —



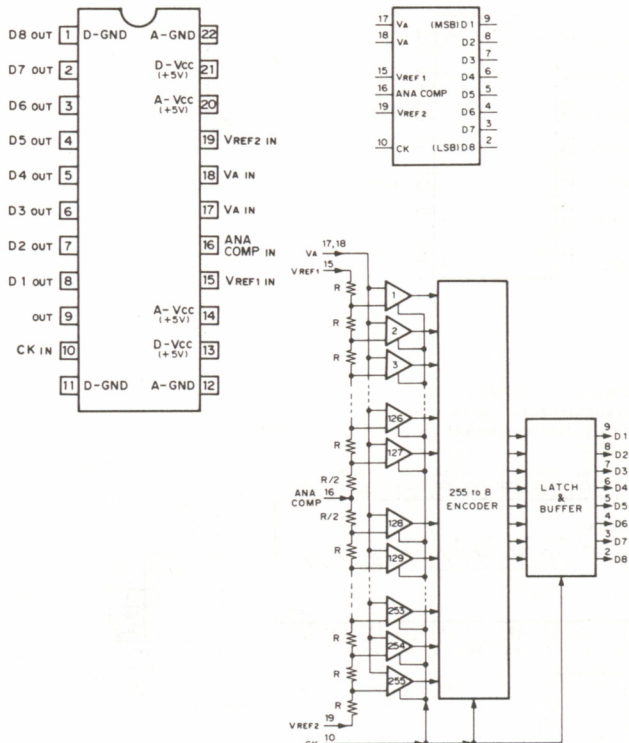
MB3614 (FUJITSU)
uPC324C (NEC)
QUAD. OP. AMPLIFIER
— TOP VIEW —



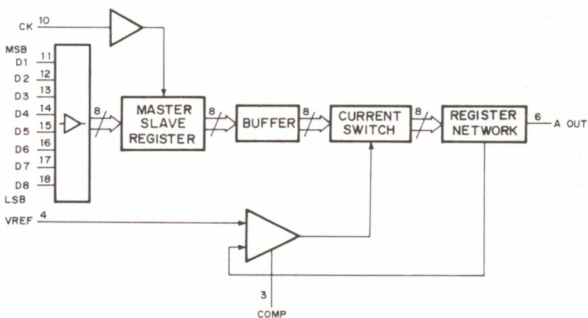
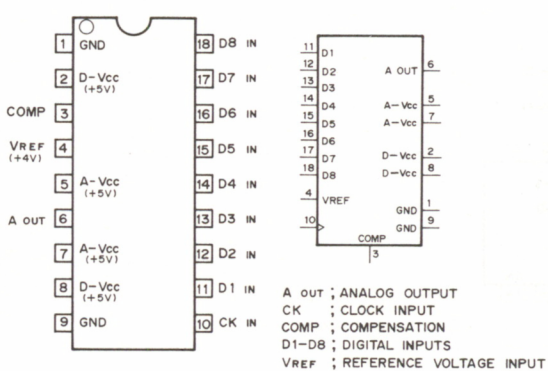
MB4001P (FUJITSU)
MB4002 (FUJITSU)
HIGH SPEED VOLTAGE COMPARATOR
— TOP VIEW —



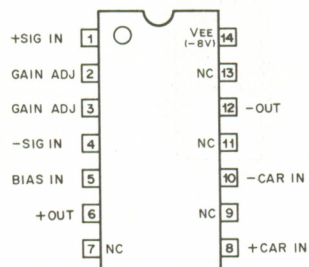
MB40578P (FUJITSU)
8-BIT VIDEO A/D CONVERTER
— TOP VIEW —



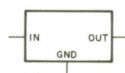
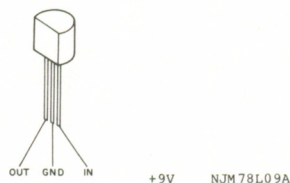
MB40778P (FUJITSU)
8-BIT VIDEO D/A CONVERTER
— TOP VIEW —



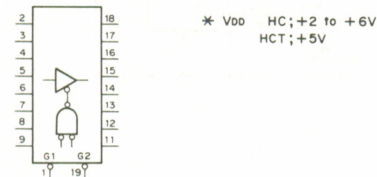
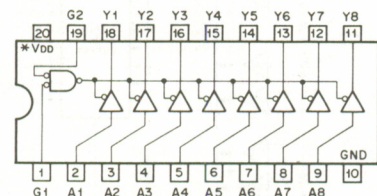
MC1496P (MOTOROLA)
BALANCED MODULATOR/DEMULATOR
— TOP VIEW —



NJM78L ? 7A (NEC)
POSITIVE VOLTAGE REGULATOR (100mA)



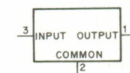
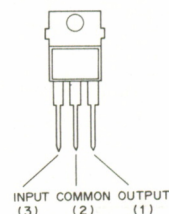
MC74HC541N (MOTOROLA)
SN74HC541NS (TI) FLAT PACKAGE
C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS
— TOP VIEW —



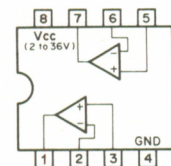
G1	G2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	HI-Z

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE

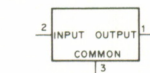
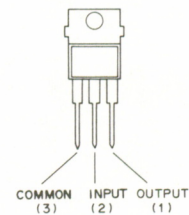
NJM78M ? 7A (JRC)
POSITIVE VOLTAGE REGULATOR (500mA)
— FRONT VIEW —



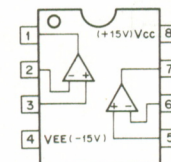
NJM2903D (JRC)
uPC393C (NEC)
VOLTAGE COMPARATOR
— TOP VIEW —



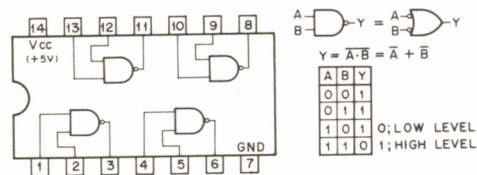
NJM79M ? 7A (JRC)
NEGATIVE VOLTAGE REGULATOR (500mA)
— FRONT VIEW —



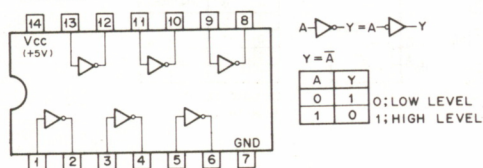
NJM4558D (JRC)
uPC4558C (NEC)
OPERATIONAL AMPLIFIER
— TOP VIEW —



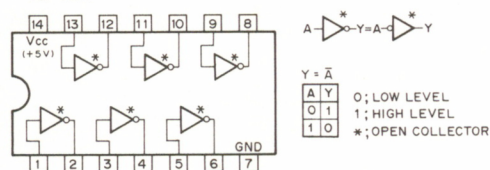
SN74LS00N (TI)
TTL 2-INPUT POSITIVE-NAND GATE
— TOP VIEW —



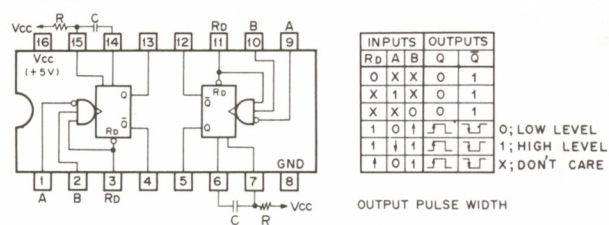
SN74LS04N (TI)
TTL INVERTER
— TOP VIEW —



SN74LS06N (TI)
TTL INVERTER BUFFER/DRIVER WITH OPEN-COLLECTOR
— TOP VIEW —



SN74LS123N (TI)
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
— TOP VIEW —



OUTPUT PULSE WIDTH

$$T_w = 0.28 \left(1 + \frac{700}{R} \right) CR$$

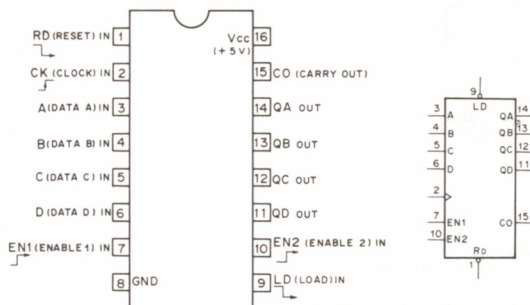
$$T_w = 0.33 \left(1 + \frac{700}{R} \right) CR$$

$$T_w = 0.25 \left(1 + \frac{700}{R} \right) CR$$

$$T_w = 0.29 \left(1 + \frac{700}{R} \right) CR$$

$$T_w = 0.45 CR$$

SN74LS163AN (TI)
TTL PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
— TOP VIEW —



MODE SELECTION

CONTROL	LD	EN1	EN2	MODE
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

CARRY OUTPUT "CO"

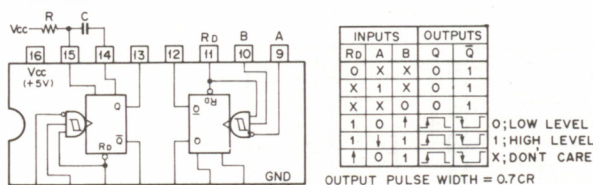


CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS '15'.

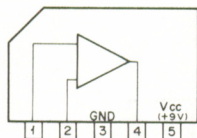
COUNT SEQUENCE

COUNT	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

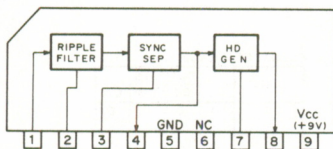
SN74LS221N (TI)
TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
— TOP VIEW —



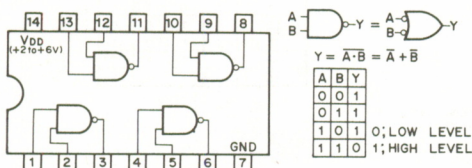
TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —



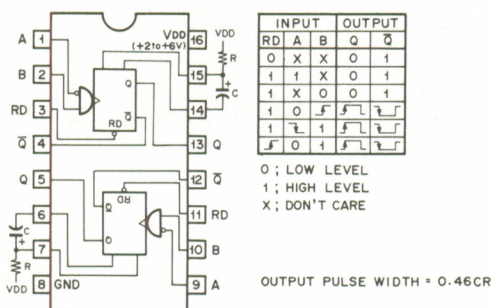
TA7357AP (TOSHIBA)
SYNC SEPARATOR/HD PULSE GENERATOR
— SIDE VIEW —



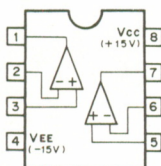
TC74HC00P (TOSHIBA)
C-MOS 2-INPUT NAND GATE
— TOP VIEW —



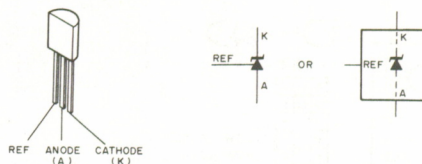
TC74HC123P (TOSHIBA)
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
— TOP VIEW —



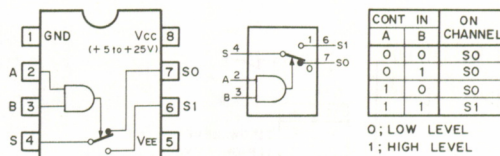
TL082CP (TI)
uPC4082C (NEC)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
— TOP VIEW —



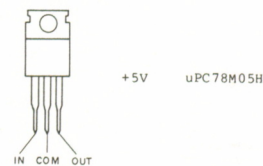
TL431CLP (TI)
ADJUSTABLE PRECISION SHUNT REGULATOR



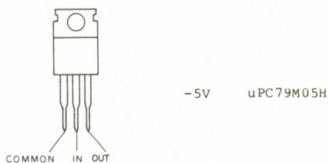
TL601CP (TI)
P-MOS ANALOG SWITCH
— TOP VIEW —

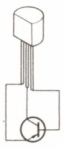


uPC78M ? ?H (NEC)
POSITIVE VOLTAGE REGULATOR (0.5A)
— SIDE VIEW —



uPC79M ? ?H (NEC)
NEGATIVE VOLTAGE REGULATOR (0.5A)
— SIDE VIEW —





2SA1015
2SA844



2SA1048
2SA1115



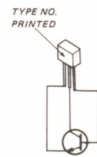
2SA1175



2SC1815



2SC2458
2SC2603



2SC2785
2SC2786



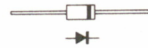
2SC2901



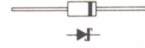
2SD773



2SK523



1SS119
1SS133



1SS97
1SS99



FC51M
FC54M

SECTION 6

SCHEMATIC DIAGRAMS

回路図内において、REF. NO の近傍に下記記号が記載されていますが、これは生産時の部品データです。

In the schematic diagrams, the following marks are described nearby reference number.
These are parts data at factory.

CAPACITOR (C)

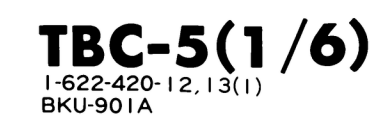
AL	}	ELECTROLYTIC
AS		
TA	}	TANTALUM
CA	}	CERAMIC
CC		
CCS		
CM		
CS	}	
MPS	}	MYLAR
PP		
PS		
PT		
MD	}	DIPPED MICA
MS	}	MICA

RESISTOR (R)

VARIABLE RESISTOR (RV)

RC	}	CARBON
RD		
RF	}	FUSE
RN	}	METAL
RS		
RW	}	WIREWOUND

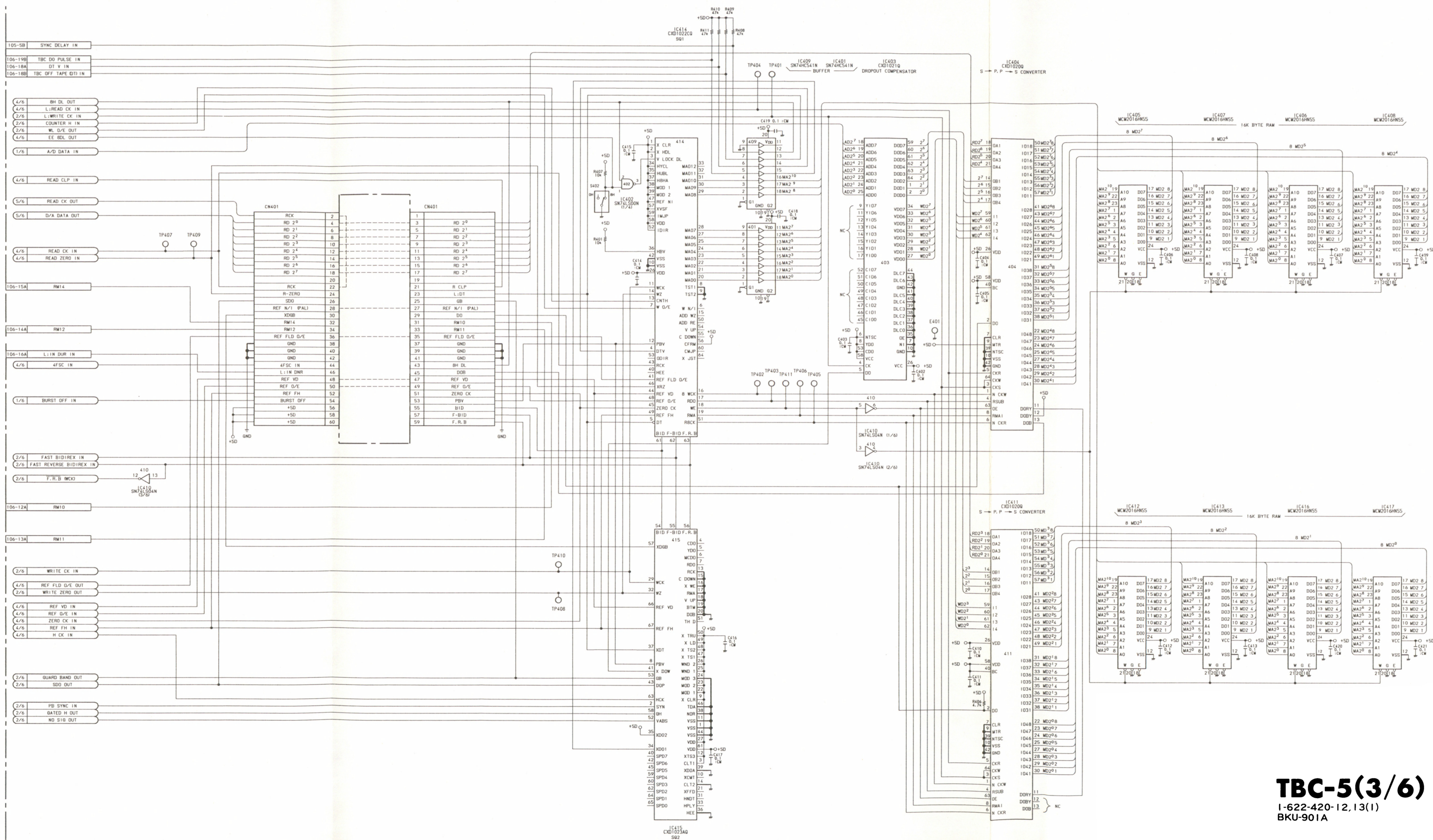
5



TBC-5(2/6)
1-622-420-12,13(1)
BKU-901A

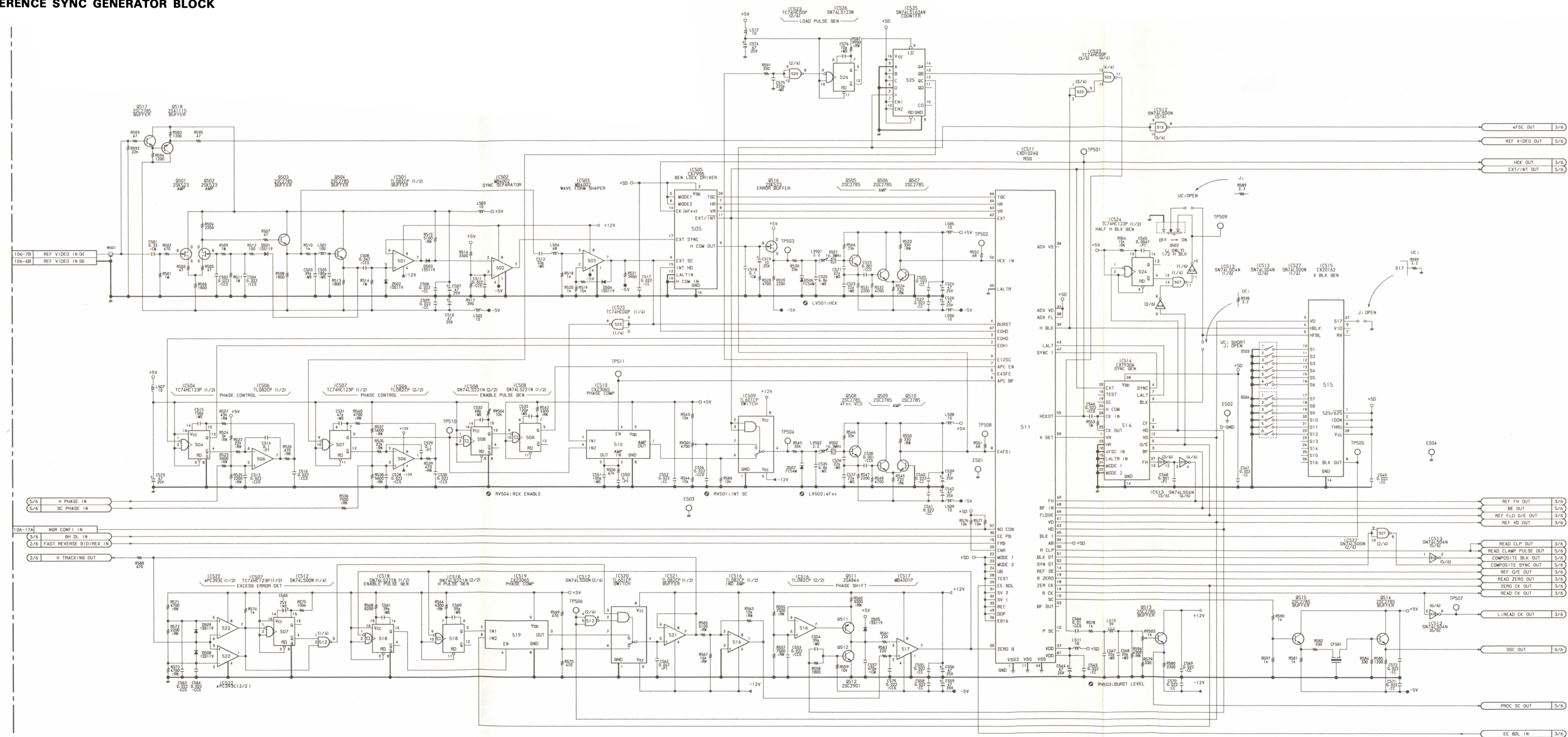


TBC-5(3/6); MEMORY CONTROL BLOCK



TBC-5(3/6)
1-622-420-12,13(1)
BKU-901A

TBC-5(4/6)
1-622-420-12,13(1)
BKU-901A



TBC-5(5/6): OUTPUT SIGNAL BLOCK

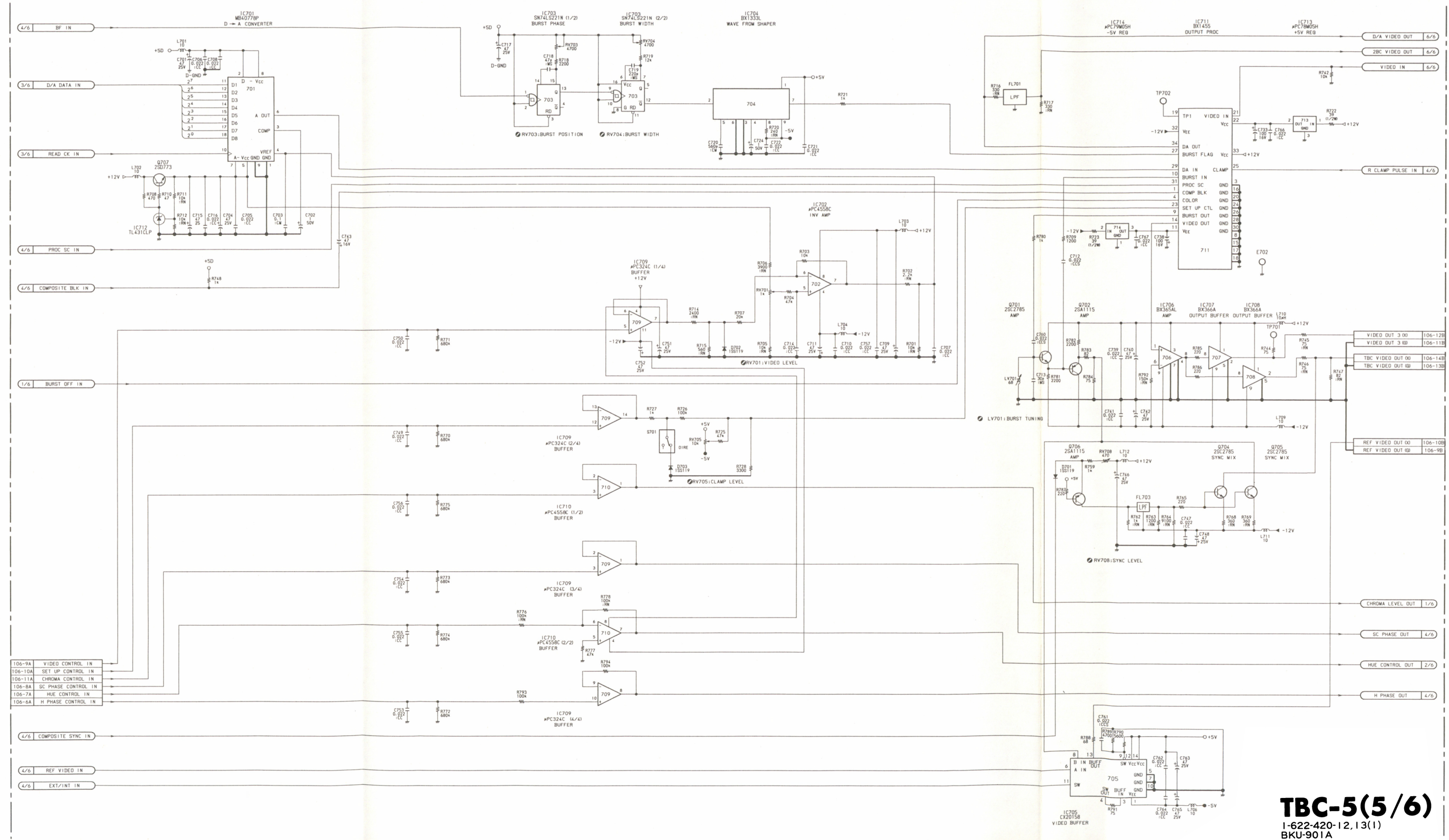
1

2

3

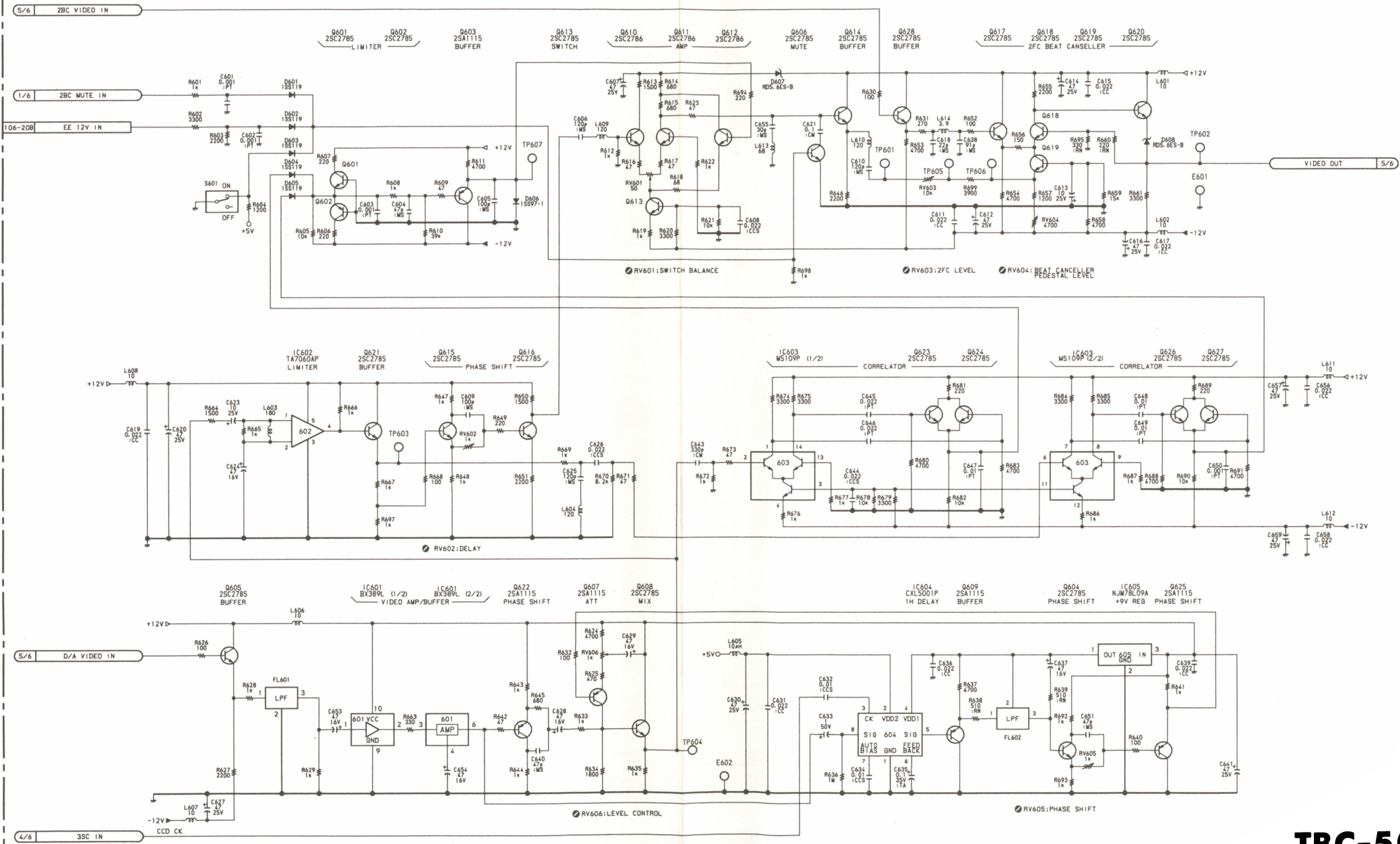
4

5



TBC-5(5/6)
1-622-420-12,13(1)
BKU-901A

TBC-5(6/6): 2nd BEAT CANCEL BLOCK



TBC-5(6/6)

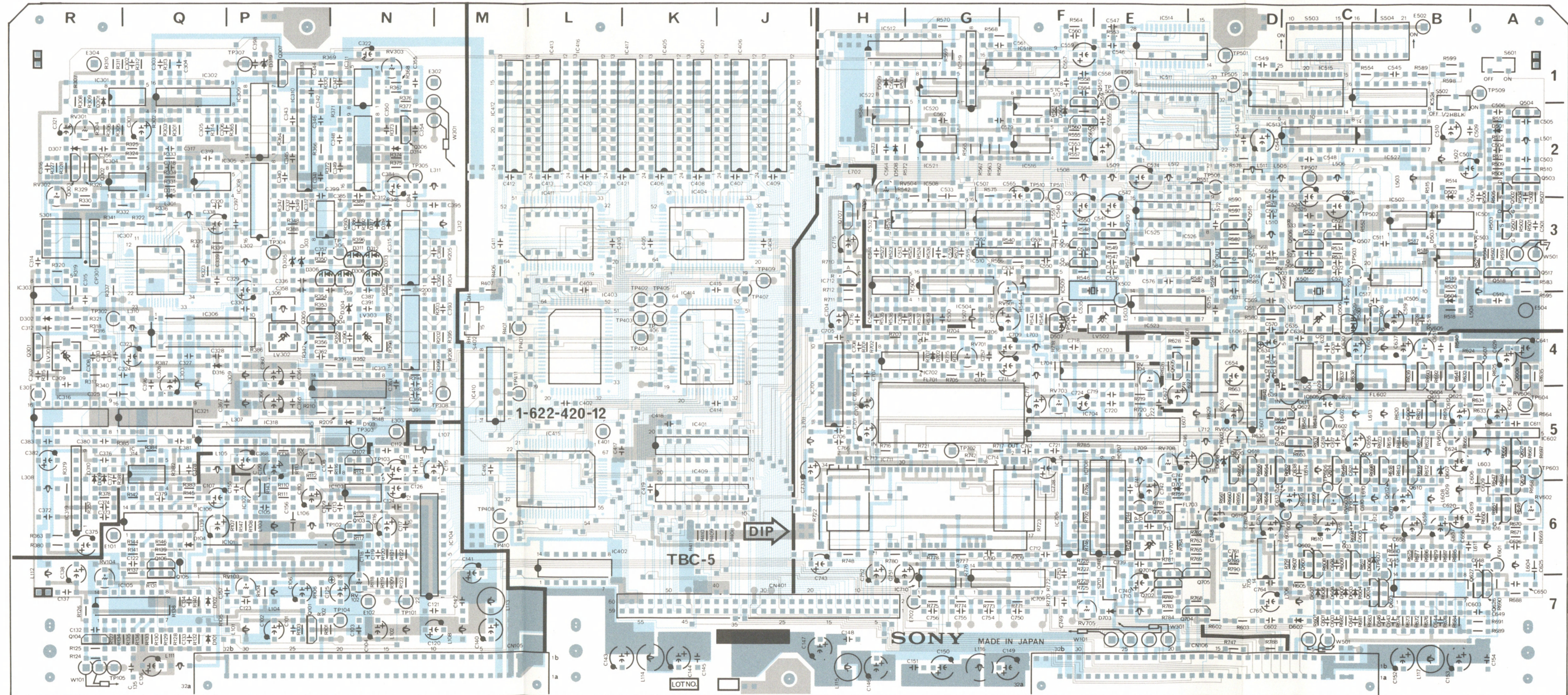
1-622-420-12,13(1)
BKU-901A

SECTION 7
PRINTED CIRCUIT BOARDSTBC-5; TIME BASE CORRECTOR
DUS-151; CONNECTION BOARDS/N UP TO 10360(J)
S/N UP TO 12230(UC)

TBC-5(1-622-420-12)

CN105	N-7	E503	E-4	IC505	B-3	Q304	P-4	RV103	P-7	TP509	A-1
CN106	D-7	E504	A-4	IC506	H-3	Q305	P-4	RV104	R-7	TP510	F-2
CN401	J-7	E601	A-6	IC507	F-3	Q306	N-2	RV301	R-2	TP511	F-2
CP301	R-3	E602	C-5	IC508	G-3	Q307	P-1	RV302	R-2	TP601	C-6
		E702	G-7	IC509	F-3	Q501	A-3	RV303	N-1	TP602	D-5
D101	Q-7	FL601	D-4	IC510	F-3	Q502	A-3	RV501	F-3	TP603	A-5
		FL602	B-4	IC511	E-2	Q503	A-2	RV503	D-3	TP604	A-5
D102	Q-7	FL602	B-4	IC512	H-1	Q504	A-2	RV504	H-2	TP605	C-6
D103	N-5	FL701	G-5	IC513	C-2	Q505	C-3	RV601	B-5	TP606	C-6
D104	Q-6	FL703	E-6	IC514	E-1	Q506	C-3	RV602	A-6	TP607	B-6
D301	R-1			IC515	C-1	Q507	C-3	RV603	C-6	TP701	E-6
D302	R-4			IC516	F-2	Q508	F-3	RV604	D-5	TP702	G-5
D303	D-3			IC517	F-2	Q509	F-3	RV605	B-4		
D304	N-4			IC518	F-1	Q510	E-3	RV606	A-4	X501	C-3
D305	P-3			IC519	G-1	Q511	F-2	RV701	G-4	X502	F-3
D306	P-3			IC520	G-1	Q512	F-2	RV703	F-5		
D307	R-2			IC521	G-2	Q513	D-4	RV704	E-4		
D308	N-3			IC522	H-2	Q514	D-3	RV705	F-7		
D309	R-5			IC523	E-4	Q515	D-3	RV708	E-5		
D310	R-5			IC524	B-1	Q516	C-4				
D311	N-3			IC525	E-3	Q517	A-3	S301	R-3		
D312	N-3			IC526	E-3	Q518	A-3	S402	M-4		
D313	N-3			IC527	B-2	Q601	C-6	S502	B-1		
D314	N-2			IC601	D-4	Q602	C-6	S503	C-1		
D315	Q-2			IC602	A-5	Q603	C-6	S504	B-1		
D316	Q-4			IC603	B-7	Q604	B-4	S601	A-1		
D317	N-3			IC604	C-4	Q605	E-4	S701	E-7		
D318	N-3			IC605	C-5	Q606	C-5				
D319	P-1			IC701	H-4	Q607	A-4	TP101	N-7		
D501	A-2			IC702	H-4	Q608	A-4	TP102	N-6		
D502	A-2			IC703	E-4	Q609	C-4	TP103	N-5		
D503	B-3			IC704	E-5	Q610	B-5	TP104	N-7		
D504	B-4			IC705	D-6	Q611	B-5	TP105	R-7		
D505	F-2			IC706	F-6	Q612	B-5	TP302	R-4		
D506	C-4			IC707	E-6	Q613	B-5	TP303	N-5		
D507	F-4			IC708	E-6	Q614	C-5	TP304	P-3		
D508	H-2			IC709	F-7	Q615	A-5	TP305	N-2		
D509	H-1			IC710	G-7	Q616	A-6	TP306	N-3		
D601	C-7			IC711	G-6	Q617	D-5	TP307	P-1		
D602	C-7			IC712	H-3	Q618	D-5	TP308	M-5		
D603	C-7			IC713	H-6	Q619	D-6	TP401	M-4		
D604	C-7			IC714	F-6	Q620	D-5	TP402	K-4		
D605	C-7					Q621	A-5	TP403	K-4		
D606	C-6			LV301	R-4	Q622	C-5	TP404	K-4		
D607	B-5			LV302	P-4	Q623	B-7	TP405	K-4		
D608	D-5			LV303	N-4	Q624	C-7	TP406	K-4		
D701	E-6			LV501	C-4	Q625	B-4	TP407	J-3		
D702	G-4			LV502	E-4	Q626	A-7	TP408	M-6		
D703	E-7			LV701	E-6	Q627	A-7	TP409	J-3		
						Q628	C-5	TP410	M-6		
						Q701	E-7	TP411	M-5		
E101	R-6			Q101	P-7	Q702	E-7	TP501	D-1		
E102	N-7			Q102	N-5	Q703	D-7	TP502	C-3		
E301	R-5			Q103	N-6	Q704	D-7	TP503	C-3		
E302	N-1			Q104	R-7	Q705	D-7	TP504	F-4		
E303	N-5			Q105	Q-6	Q706	E-6	TP505	D-1		
E304	R-1			Q106	Q-6	Q707	H-3	TP506	E-1		
E401	L-5			Q301	R-4			TP507	C-2		
E501	E-1			Q302	R-2	RV101	P-5	TP508	D-2		
E502	B-1			Q303	R-2	RV102	N-7				

7-1 (a)



7-2 (a)

7-3 (a)

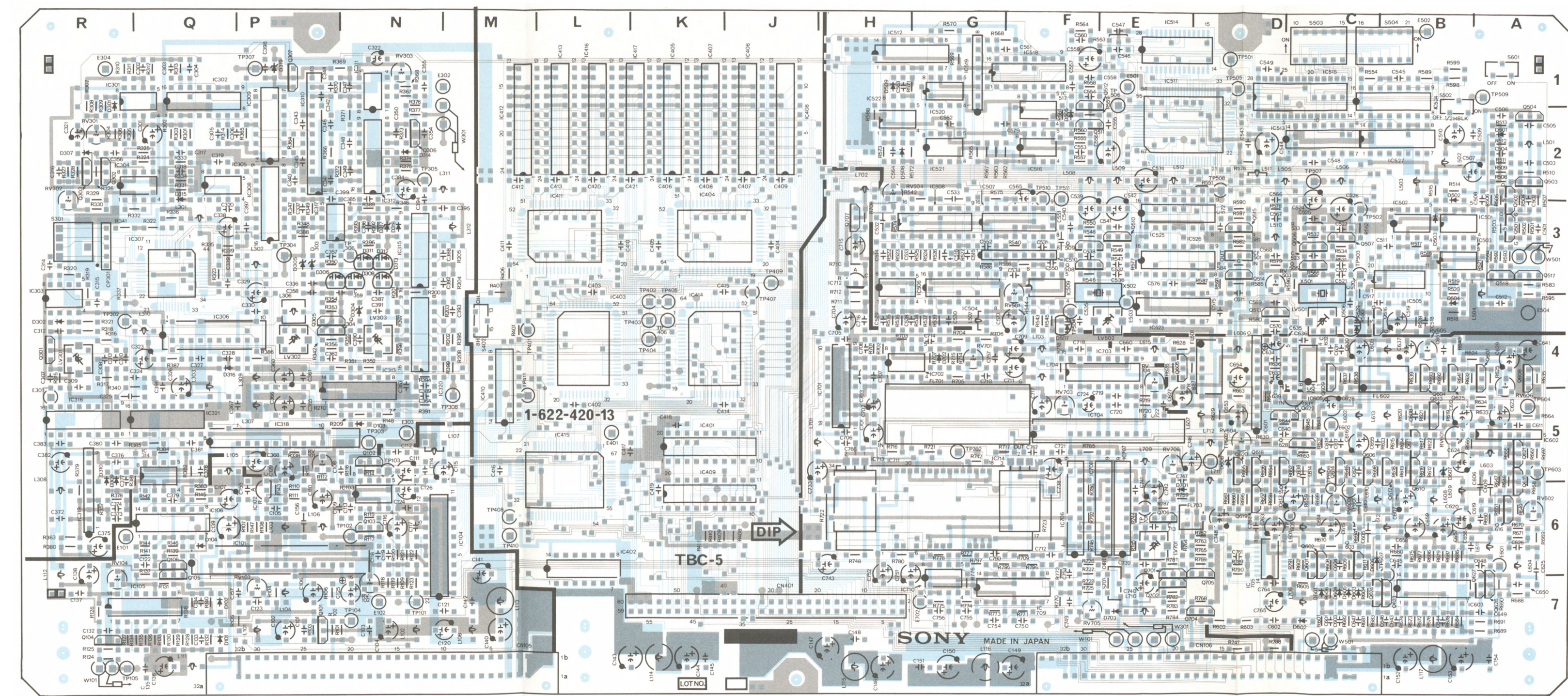
7-4 (a)

TBC-5; TIME BASE CORRECTOR
DUS-151; CONNECTION BOARD

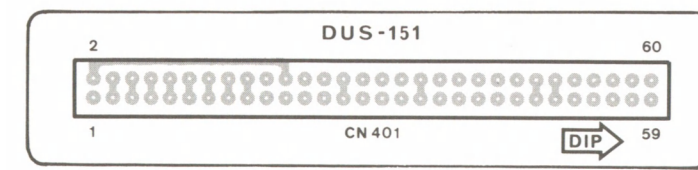
S/N 10361 AND HIGHER(J)
S/N 12231 AND HIGHER(UC)

TCB-5(1-622-420-13)

CN105	N-7	E503	E-4	IC505	B-3	Q304	P-4	RV103	P-7	TP509	A-1
CN106	D-7	E504	A-4	IC506	H-3	Q305	P-4	RV104	R-7	TP510	F-2
CN401	J-7	E601	A-6	IC507	F-3	Q306	N-2	RV301	R-2	TP511	F-2
		E602	C-5	IC508	G-3	Q307	P-1	RV302	R-2	TP601	C-6
CP301	R-3	E702	G-7	IC509	G-3	Q501	A-3	RV303	N-1	TP602	D-5
				IC510	F-3	Q502	A-3	RV501	F-3	TP603	A-5
D101	Q-7	FL601	D-4	IC511	E-2	Q503	A-2	RV503	D-3	TP604	A-5
D102	Q-7	FL602	B-4	IC512	H-1	Q504	A-2	RV504	H-2	TP605	C-6
D103	N-5	FL701	G-5	IC513	C-2	Q505	C-3	RV601	B-5	TP606	C-6
D104	Q-6	FL703	E-6	IC514	E-1	Q506	C-3	RV602	A-6	TP607	B-7
D301	R-1			IC515	C-1	Q507	C-3	RV603	C-6	TP701	E-6
D302	R-4	IC101	P-6	IC516	F-2	Q508	F-3	RV604	D-5	TP702	G-5
D303	P-3	IC102	P-6	IC517	F-2	Q509	F-3	RV605	B-4		
D304	N-4	IC103	N-6	IC518	F-1	Q510	E-3	RV606	A-4	X501	C-3
D305	P-3	IC104	N-6	IC519	G-1	Q511	F-2	RV701	G-4	X502	F-3
D306	P-3	IC105	Q-7	IC520	G-1	Q512	F-2	RV703	F-5		
D307	R-2	IC106	Q-6	IC521	G-2	Q513	D-4	RV704	E-4		
D308	N-3	IC301	Q-1	IC522	H-2	Q514	D-3	RV705	F-7		
D309	R-5	IC302	Q-1	IC523	E-4	Q515	D-3	RV708	E-5		
D310	R-5	IC303	R-4	IC524	B-1	Q516	C-4				
D311	N-3	IC304	Q-2	IC525	E-3	Q517	A-3	S301	R-3		
D312	N-3	IC305	Q-2	IC526	E-3	Q518	A-3	S402	M-4		
D313	N-3	IC306	Q-4	IC527	B-2	Q601	C-6	S502	B-1		
D314	N-2	IC307	Q-3	IC601	D-4	Q602	C-6	S503	C-1		
D315	Q-2	IC308	P-3	IC602	A-5	Q603	C-6	S504	B-1		
D316	Q-4	IC309	P-2	IC603	B-7	Q604	B-4	S601	A-1		
D317	N-3	IC310	P-2	IC604	C-4	Q605	E-4	S701	E-7		
D318	N-3	IC311	N-1	IC605	C-5	Q606	C-5				
D319	P-1	IC312	N-2	IC701	H-4	Q607	A-4	TP101	N-7		
D501	A-2	IC313	N-4	IC702	H-4	Q608	A-4	TP102	N-6		
D502	B-2	IC314	Q-5	IC703	E-4	Q609	C-4	TP103	N-5		
D503	B-3	IC315	N-3	IC704	E-5	Q610	B-5	TP104	N-7		
D504	B-4	IC316	R-5	IC705	D-6	Q 611	B-5	TP105	R-7		
D505	F-2	IC317	P-3	IC706	F-6	Q612	B-5	TP302	R-4		
D506	C-4	IC318	P-5	IC707	E-6	Q613	B-5	TP303	N-5		
D507	F-4	IC319	R-6	IC708	E-6	Q614	C-5	TP304	P-3		
D508	H-2	IC320	N-4	IC709	F-7	Q615	C-5	TP305	N-2		
D509	H-1	IC321	Q-5	IC710	G-7	Q616	A-6	TP306	N-3		
D601	C-7	IC401	K-5	IC711	G-6	Q617	D-5	TP307	P-1		
D602	C-7	IC402	L-6	IC712	H-3	Q618	D-5	TP308	M-5		
D603	C-7	IC403	L-4	IC713	H-6	Q619	D-6	TP401	M-4		
D604	C-7	IC404	K-3	IC714	H-6	Q620	D-5	TP402	K-4		
D605	C-7	IC405	K-2			Q621	A-5	TP403	K-4		
D606	C-6	IC406	J-2	LV301	R-4	Q622	C-5	TP404	K-4		
D607	B-5	IC407	K-2	LV302	P-4	Q623	B-7	TP405	K-4		
D608	D-5	IC408	J-2	LV303	N-4	Q624	C-7	TP406	K-4		
D701	E-6	IC409	K-6	LV501	C-4	Q625	B-4	TP407	J-3		
D702	G-4	IC410	M-4	LV502	E-4	Q626	A-7	TP408	M-6		
D703	E-7	IC411	L-3	LV701	E-6	Q627	A-7	TP409	J-3		
		IC412	M-2			Q628	C-5	TP410	M-6		
E101	R-6	IC413	L-2	Q101	P-7	Q701	E-7	TP411	M-5		
E102	N-7	IC414	K-4	Q102	N-5	Q702	E-7	TP501	C-1		
E301	R-5	IC415	L-5	Q103	N-6	Q704	D-7	TP502	C-3		
E302	N-1	IC416	L-2	Q104	R-7	Q705	D-7	TP503	C-3		
E303	N-5	IC417	K-2	Q105	Q-6	Q706	E-6	TP504	F-4		
E304	R-1	IC501	B-3	Q106	Q-6	Q707	H-3	TP505	D-1		
E401	L-5	IC502	B-3	Q301	R-4			TP506	E-1		
E501	E-1	IC503	B-3	Q302	R-2	RV101	P-5	TP507	C-2		
E502	B-1	IC504	G-3	Q303	R-2	RV102	N-7	TP508	D-2		



TBC-5 COMPONENT SIDE -
1-622-420-13(1)
BKU-901A



DUS-151 COMPONENT SIDE -
1-622-424-12, 13(1)
BKU-901A

SECTION 8

ELECTRICAL PARTS LIST

8-1. PARTS INFORMATION

1. Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to "improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's electrical spare parts list indicate the part numbers of "the standardized genuine parts at the present". Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.
2. The parts marked with "s" in the SP column of the electrical spare parts lists are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.
3. Items with no part number and/or no description are not stocked because they are seldom required for routine service.

ABBREVIATIONS

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
C□□, CT□□	CAPACITOR	IC□□	IC	Q□□	TRANSISTOR
CF□□	CERAMIC FILTER	J□□	JACK	R□□, RV□□	RESISTOR
CN□□	CONNECTOR	L□□	INDUCTOR	RY□□	RELAY
D□□	DIODE	M□□	MOTOR	S□□, SW□□	SWITCH
DL□□	DELAY LINE	ME□□	METER	SB□□	SOLAR BATTERY
F□□	FUSE	MIC□□	MICROPHONE	T□□	TRANSFORMER
FB□□	FERRITE BEAD	PG□□	PG COIL	TH□□	THERMISTOR
FL□□	FILTER	PL□□	LAMP	X□□	CRYSTAL
H□□	HEAD	PM□□	SOLENOIDE		

All capacitors are in micro farads unless otherwise specified.

All inductors are in micro henries unless otherwise specified.

All resistors are in ohms.

8-2. ELECTRICAL PARTS LIST

General Purpose Electrical Parts List

Parts that are not listed in the "reference numbers order list" are shown in following list.

Reference numbers are omitted.

Parts No. SP Description

CAPACITOR

. CERAMIC

1-161-039-00 s CAP, CERAMIC 0.001 10% 50V
1-161-041-00 s CAP, CERAMIC 0.0015 10% 50V
1-161-043-00 s CAP, CERAMIC 0.0022 10% 50V
1-161-045-00 s CAP, CERAMIC 0.0033 10% 50V
1-161-047-00 s CAP, CERAMIC 0.0047 10% 50V

1-161-049-00 s CAP, CERAMIC 0.0068 10% 50V
1-161-051-00 s CAP, CERAMIC 0.01 10% 50V
1-161-053-00 s CAP, CERAMIC 0.015 10% 50V
1-161-055-00 s CAP, CERAMIC 0.022 10% 50V
1-161-057-00 s CAP, CERAMIC 0.033 10% 50V

1-161-021-11 s CAP, CERAMIC 0.047 10% 25V
1-161-059-00 s CAP, CERAMIC 0.047 10% 50V
1-161-061-00 s CAP, CERAMIC 0.068 10% 50V
1-161-772-11 s CAP, CERAMIC 0.1 10% 25V
1-161-063-00 s CAP, CERAMIC 0.1 10% 50V

. MYLAR

1-130-467-00 s CAP, MYLAR 470pF 5% 50V
1-130-468-00 s CAP, MYLAR 560pF 5% 50V
1-130-469-00 s CAP, MYLAR 680pF 5% 50V
1-130-470-00 s CAP, MYLAR 820pF 5% 50V
1-130-471-00 s CAP, MYLAR 1000pF 5% 50V

1-130-472-00 s CAP, MYLAR 1200pF 5% 50V
1-130-473-00 s CAP, MYLAR 1500pF 5% 50V
1-130-474-00 s CAP, MYLAR 1800pF 5% 50V
1-130-475-00 s CAP, MYLAR 2200pF 5% 50V
1-130-476-00 s CAP, MYLAR 2700pF 5% 50V

1-130-477-00 s CAP, MYLAR 3300pF 5% 50V
1-130-478-00 s CAP, MYLAR 3900pF 5% 50V
1-130-479-00 s CAP, MYLAR 4700pF 5% 50V
1-130-480-00 s CAP, MYLAR 5600pF 5% 50V
1-130-481-00 s CAP, MYLAR 6800pF 5% 50V

1-130-482-00 s CAP, MYLAR 8200pF 5% 50V
1-130-483-00 s CAP, MYLAR 0.01 5% 50V
1-130-484-00 s CAP, MYLAR 0.012 5% 50V
1-130-485-00 s CAP, MYLAR 0.015 5% 50V
1-130-486-00 s CAP, MYLAR 0.018 5% 50V

1-130-487-00 s CAP, MYLAR 0.022 5% 50V
1-130-488-00 s CAP, MYLAR 0.027 5% 50V
1-130-489-00 s CAP, MYLAR 0.033 5% 50V
1-130-490-11 s CAP, MYLAR 0.039 5% 50V
1-130-491-00 s CAP, MYLAR 0.047 5% 50V

1-130-492-11 s CAP, MYLAR 0.056 5% 50V
1-130-493-00 s CAP, MYLAR 0.068 5% 50V
1-130-494-11 s CAP, MYLAR 0.082 5% 50V
1-130-495-00 s CAP, MYLAR 0.1 5% 50V
1-130-496-00 s CAP, MYLAR 0.12 5% 50V

1-130-497-00 s CAP, MYLAR 0.15 5% 50V
1-130-498-00 s CAP, MYLAR 0.18 5% 50V
1-130-499-00 s CAP, MYLAR 0.22 5% 50V
1-136-502-11 s CAP, MYLAR 0.33 5% 50V

Part No. SP Description

. TANTALUM

1-131-396-11 s CAP, TANTALUM 0.01 20% 35V
1-131-397-11 s CAP, TANTALUM 0.015 20% 35V
1-131-398-11 s CAP, TANTALUM 0.022 20% 35V
1-131-399-11 s CAP, TANTALUM 0.033 20% 35V
1-131-400-11 s CAP, TANTALUM 0.047 20% 35V

1-131-401-21 s CAP, TANTALUM 0.068 10% 35V
1-131-341-21 s CAP, TANTALUM 0.1 10% 35V
1-131-342-21 s CAP, TANTALUM 0.15 10% 35V
1-131-343-21 s CAP, TANTALUM 0.22 10% 35V
1-131-344-21 s CAP, TANTALUM 0.33 10% 35V

1-131-412-11 s CAP, TANTALUM 0.47 20% 20V
1-131-345-21 s CAP, TANTALUM 0.47 10% 35V
1-131-410-11 s CAP, TANTALUM 0.68 20% 25V
1-131-346-21 s CAP, TANTALUM 0.68 10% 35V
1-131-413-11 s CAP, TANTALUM 1.0 20% 20V

1-131-347-21 s CAP, TANTALUM 1.0 10% 35V
1-131-416-11 s CAP, TANTALUM 1.5 20% 16V
1-131-348-21 s CAP, TANTALUM 1.5 10% 35V
1-131-419-11 s CAP, TANTALUM 2.2 20% 10V
1-131-361-21 s CAP, TANTALUM 2.2 10% 20V

1-131-349-21 s CAP, TANTALUM 2.2 10% 35V
1-131-422-11 s CAP, TANTALUM 3.3 20% 6.3V
1-131-368-21 s CAP, TANTALUM 3.3 10% 16V
1-131-356-21 s CAP, TANTALUM 3.3 10% 25V
1-131-350-21 s CAP, TANTALUM 3.3 10% 35V

1-131-425-11 s CAP, TANTALUM 4.7 20% 3.15V
1-131-375-21 s CAP, TANTALUM 4.7 10% 10V
1-131-363-21 s CAP, TANTALUM 4.7 10% 20V
1-131-351-21 s CAP, TANTALUM 4.7 10% 35V
1-131-382-21 s CAP, TANTALUM 6.8 10% 6.3V

1-131-370-21 s CAP, TANTALUM 6.8 10% 16V
1-131-358-21 s CAP, TANTALUM 6.8 10% 25V
1-131-352-21 s CAP, TANTALUM 6.8 10% 35V
1-131-389-21 s CAP, TANTALUM 10 10% 3.15V
1-131-377-21 s CAP, TANTALUM 10 10% 10V

1-131-365-21 s CAP, TANTALUM 10 10% 20V
1-131-353-21 s CAP, TANTALUM 10 10% 35V
1-131-384-21 s CAP, TANTALUM 15 10% 6.3V
1-131-372-21 s CAP, TANTALUM 15 10% 16V
1-131-360-21 s CAP, TANTALUM 15 10% 25V

1-131-391-21 s CAP, TANTALUM 22 10% 3.15V
1-131-379-21 s CAP, TANTALUM 22 10% 10V
1-131-367-21 s CAP, TANTALUM 22 10% 20V
1-131-386-21 s CAP, TANTALUM 33 10% 6.3V
1-131-374-21 s CAP, TANTALUM 33 10% 16V

1-131-393-21 s CAP, TANTALUM 47 10% 3.15V
1-131-381-21 s CAP, TANTALUM 47 10% 10V
1-131-388-21 s CAP, TANTALUM 68 10% 6.3V
1-131-395-21 s CAP, TANTALUM 100 10% 3.15V

Part No. SP Description

. ELECTROLYTIC

1-124-902-00	s	CAP, ELECT	0.47	20%	50V
1-124-791-11	s	CAP, ELECT	1.0	20%	100V
1-124-925-11	s	CAP, ELECT	2.2	20%	100V
1-123-382-00	s	CAP, ELECT	3.3	20%	100V
1-124-927-00	s	CAP, ELECT	4.7	20%	100V
1-123-875-91	s	CAP, ELECT	10	20%	50V
1-124-908-11	s	CAP, ELECT	22	20%	50V
1-124-963-11	s	CAP, ELECT	33	20%	16V
1-124-482-11	s	CAP, ELECT	33	20%	35V
1-124-917-11	s	CAP, ELECT	33	20%	63V
1-124-446-11	s	CAP, ELECT	47	20%	10V
1-124-477-11	s	CAP, ELECT	47	20%	25V
1-124-910-11	s	CAP, ELECT	47	20%	50V
1-124-443-00	s	CAP, ELECT	100	20%	10V
1-126-101-11	s	CAP, ELECT	100	20%	16V
1-124-478-11	s	CAP, ELECT	100	20%	25V
1-124-122-11	s	CAP, ELECT	100	20%	50V
1-124-444-00	s	CAP, ELECT	220	20%	10V
1-124-120-11	s	CAP, ELECT	220	20%	25V
1-124-484-11	s	CAP, ELECT	220	20%	35V
1-124-911-11	s	CAP, ELECT	220	20%	50V
1-124-442-00	s	CAP, ELECT	330	20%	6.3V
1-124-604-00	s	CAP, ELECT	330	20%	10V
1-124-119-00	s	CAP, ELECT	330	20%	16V
1-124-479-11	s	CAP, ELECT	330	20%	25V
1-124-485-11	s	CAP, ELECT	330	20%	35V
1-124-912-11	s	CAP, ELECT	330	20%	50V
1-124-472-11	s	CAP, ELECT	470	20%	10V
1-124-475-11	s	CAP, ELECT	470	20%	16V
1-124-480-11	s	CAP, ELECT	470	20%	25V
1-126-104-11	s	CAP, ELECT	470	20%	35V
1-124-913-11	s	CAP, ELECT	470	20%	50V

Part No. SP Description

. MICA, SILVERED

1-107-019-00	s	CAP, MICA	1.0pF	±0.5pF	500V
1-107-039-00	s	CAP, MICA	1.2pF	±0.5pF	500V
1-107-040-00	s	CAP, MICA	1.5pF	±0.5pF	500V
1-107-041-00	s	CAP, MICA	1.8pF	±0.5pF	500V
1-107-042-00	s	CAP, MICA	2.2pF	±0.5pF	500V
1-107-043-00	s	CAP, MICA	2.7pF	±0.5pF	500V
1-107-044-00	s	CAP, MICA	3.3pF	±0.5pF	500V
1-107-045-00	s	CAP, MICA	3.9pF	±0.5pF	500V
1-107-046-00	s	CAP, MICA	4.7pF	±0.5pF	500V
1-107-026-00	s	CAP, MICA	5.1pF	±0.5pF	500V
1-107-047-00	s	CAP, MICA	5.6pF	±0.5pF	500V
1-107-048-00	s	CAP, MICA	6.8pF	±0.5pF	500V
1-107-049-00	s	CAP, MICA	8.2pF	±0.5pF	500V
1-107-202-00	s	CAP, MICA	10pF	5%	500V
1-107-203-00	s	CAP, MICA	11pF	5%	500V
1-107-204-00	s	CAP, MICA	12pF	5%	500V
1-107-205-00	s	CAP, MICA	13pF	5%	500V
1-107-206-00	s	CAP, MICA	15pF	5%	500V
1-107-207-00	s	CAP, MICA	16pF	5%	500V
1-107-208-00	s	CAP, MICA	18pF	5%	500V
1-107-209-00	s	CAP, MICA	20pF	5%	500V
1-107-210-00	s	CAP, MICA	22pF	5%	500V
1-107-211-00	s	CAP, MICA	24pF	5%	500V
1-107-157-00	s	CAP, MICA	27pF	5%	500V
1-107-158-00	s	CAP, MICA	30pF	5%	500V
1-107-159-00	s	CAP, MICA	33pF	5%	500V
1-107-074-00	s	CAP, MICA	36pF	5%	50V
1-107-075-00	s	CAP, MICA	39pF	5%	50V
1-107-076-00	s	CAP, MICA	43pF	5%	50V
1-107-077-00	s	CAP, MICA	47pF	5%	50V
1-107-164-00	s	CAP, MICA	51pF	5%	500V
1-107-165-00	s	CAP, MICA	56pF	5%	500V
1-107-166-00	s	CAP, MICA	62pF	5%	500V
1-107-036-00	s	CAP, MICA	68pF	5%	500V
1-107-167-00	s	CAP, MICA	75pF	5%	500V
1-107-083-00	s	CAP, MICA	82pF	5%	50V
1-107-084-00	s	CAP, MICA	91pF	5%	50V
1-107-085-00	s	CAP, MICA	100pF	5%	50V
1-107-086-00	s	CAP, MICA	110pF	5%	50V
1-107-087-00	s	CAP, MICA	120pF	5%	50V
1-109-538-00	s	CAP, MICA	130pF	5%	100V
1-109-539-00	s	CAP, MICA	150pF	5%	100V
1-107-090-00	s	CAP, MICA	160pF	5%	50V
1-109-540-00	s	CAP, MICA	180pF	5%	100V
1-109-541-00	s	CAP, MICA	200pF	5%	100V
1-109-542-00	s	CAP, MICA	220pF	5%	100V
1-109-545-00	s	CAP, MICA	270pF	5%	100V
1-109-547-00	s	CAP, MICA	330pF	5%	100V
1-109-549-00	s	CAP, MICA	390pF	5%	100V
1-109-633-00	s	CAP, MICA	470pF	2%	500V
1-109-555-00	s	CAP, MICA	560pF	5%	100V
1-109-635-00	s	CAP, MICA	470pF	2%	500V

Part No.	SP	Description		
<u>INDUCTOR</u>				
. MICRO				
1-408-397-00	s	INDUCTOR, MICRO	1.0	5%
1-408-399-00	s	INDUCTOR, MICRO	1.5	5%
1-408-400-00	s	INDUCTOR, MICRO	1.8	5%
1-408-401-00	s	INDUCTOR, MICRO	2.2	5%
1-408-403-00	s	INDUCTOR, MICRO	3.3	5%
1-408-404-00	s	INDUCTOR, MICRO	3.9	5%
1-408-405-00	s	INDUCTOR, MICRO	4.7	5%
1-408-406-00	s	INDUCTOR, MICRO	5.6	5%
1-408-407-00	s	INDUCTOR, MICRO	6.8	5%
1-408-408-00	s	INDUCTOR, MICRO	8.2	5%
1-408-409-00	s	INDUCTOR, MICRO	10	5%
1-408-410-00	s	INDUCTOR, MICRO	12	5%
1-408-411-00	s	INDUCTOR, MICRO	15	5%
1-408-412-00	s	INDUCTOR, MICRO	18	5%
1-408-413-00	s	INDUCTOR, MICRO	22	5%
1-408-414-00	s	INDUCTOR, MICRO	27	5%
1-408-415-00	s	INDUCTOR, MICRO	33	5%
1-408-416-00	s	INDUCTOR, MICRO	39	5%
1-408-417-00	s	INDUCTOR, MICRO	47	5%
1-408-418-00	s	INDUCTOR, MICRO	56	5%
1-408-419-00	s	INDUCTOR, MICRO	68	5%
1-408-420-00	s	INDUCTOR, MICRO	82	5%
1-408-421-00	s	INDUCTOR, MICRO	100	5%
1-408-422-00	s	INDUCTOR, MICRO	120	5%
1-408-423-00	s	INDUCTOR, MICRO	150	5%
1-408-424-00	s	INDUCTOR, MICRO	180	5%
1-408-425-00	s	INDUCTOR, MICRO	220	5%
1-408-426-00	s	INDUCTOR, MICRO	270	5%
1-408-427-00	s	INDUCTOR, MICRO	330	5%
1-408-428-00	s	INDUCTOR, MICRO	390	5%
1-408-429-00	s	INDUCTOR, MICRO	470	5%
1-410-116-11	s	INDUCTOR, MICRO	560	5%
1-410-492-11	s	INDUCTOR, MICRO	680	5%
1-410-493-11	s	INDUCTOR, MICRO	820	5%
1-410-494-11	s	INDUCTOR, MICRO	1000	5%

Part No.	SP	Description		
<u>RESISTOR</u>				
. CARBON				
1-249-381-11	s	RES, CARBON	1.0	5% 1/6W
1-249-382-11	s	RES, CARBON	1.2	5% 1/6W
1-249-383-11	s	RES, CARBON	1.5	5% 1/6W
1-249-384-11	s	RES, CARBON	1.8	5% 1/6W
1-249-385-11	s	RES, CARBON	2.2	5% 1/6W
1-249-386-11	s	RES, CARBON	2.7	5% 1/6W
1-249-387-11	s	RES, CARBON	3.3	5% 1/6W
1-249-388-11	s	RES, CARBON	3.9	5% 1/6W
1-249-389-11	s	RES, CARBON	4.7	5% 1/6W
1-249-390-11	s	RES, CARBON	5.6	5% 1/6W
1-249-391-11	s	RES, CARBON	6.8	5% 1/6W
1-249-392-11	s	RES, CARBON	8.2	5% 1/6W
1-249-393-11	s	RES, CARBON	10	5% 1/6W
1-249-394-11	s	RES, CARBON	12	5% 1/6W
1-249-395-11	s	RES, CARBON	15	5% 1/6W
1-249-396-11	s	RES, CARBON	18	5% 1/6W
1-249-397-11	s	RES, CARBON	22	5% 1/6W
1-249-398-11	s	RES, CARBON	27	5% 1/6W
1-249-399-11	s	RES, CARBON	33	5% 1/6W
1-249-400-11	s	RES, CARBON	39	5% 1/6W
1-249-401-11	s	RES, CARBON	47	5% 1/6W
1-249-402-11	s	RES, CARBON	56	5% 1/6W
1-249-403-11	s	RES, CARBON	68	5% 1/6W
1-215-394-00	s	RES, METAL	75	1% 1/6W
1-249-404-11	s	RES, CARBON	82	5% 1/6W
1-249-405-11	s	RES, CARBON	100	5% 1/6W
1-249-406-11	s	RES, CARBON	120	5% 1/6W
1-249-407-11	s	RES, CARBON	150	5% 1/6W
1-249-408-11	s	RES, CARBON	180	5% 1/6W
1-249-409-11	s	RES, CARBON	220	5% 1/6W
1-249-410-11	s	RES, CARBON	270	5% 1/6W
1-249-411-11	s	RES, CARBON	330	5% 1/6W
1-249-412-11	s	RES, CARBON	390	5% 1/6W
1-249-413-11	s	RES, CARBON	470	5% 1/6W
1-249-414-11	s	RES, CARBON	560	5% 1/6W
1-249-415-11	s	RES, CARBON	680	5% 1/6W
1-249-416-11	s	RES, CARBON	820	5% 1/6W
1-249-417-11	s	RES, CARBON	1.0k	5% 1/6W
1-249-418-11	s	RES, CARBON	1.2k	5% 1/6W
1-249-419-11	s	RES, CARBON	1.5k	5% 1/6W
1-249-420-11	s	RES, CARBON	1.8k	5% 1/6W
1-249-421-11	s	RES, CARBON	2.2k	5% 1/6W
1-249-422-11	s	RES, CARBON	2.7k	5% 1/6W
1-249-423-11	s	RES, CARBON	3.3k	5% 1/6W
1-249-424-11	s	RES, CARBON	3.9k	5% 1/6W
1-249-425-11	s	RES, CARBON	4.7k	5% 1/6W
1-249-426-11	s	RES, CARBON	5.6k	5% 1/6W
1-249-427-11	s	RES, CARBON	6.8k	5% 1/6W
1-249-428-11	s	RES, CARBON	8.2k	5% 1/6W
1-249-429-11	s	RES, CARBON	10k	5% 1/6W
1-249-430-11	s	RES, CARBON	12k	5% 1/6W
1-249-431-11	s	RES, CARBON	15k	5% 1/6W
1-249-432-11	s	RES, CARBON	18k	5% 1/6W
1-249-433-11	s	RES, CARBON	22k	5% 1/6W
1-249-434-11	s	RES, CARBON	27k	5% 1/6W
1-249-435-11	s	RES, CARBON	33k	5% 1/6W
1-249-436-11	s	RES, CARBON	39k	5% 1/6W
1-249-437-11	s	RES, CARBON	47k	5% 1/6W
1-249-438-11	s	RES, CARBON	56k	5% 1/6W
1-249-439-11	s	RES, CARBON	68k	5% 1/6W

Part No. SP Description

1-249-440-11	s	RES, CARBON	82k	5%	1/6W
1-249-441-11	s	RES, CARBON	100k	5%	1/6W
1-215-471-00	s	RES, METAL	120k	1%	1/6W
1-215-473-00	s	RES, METAL	150k	1%	1/6W
1-215-475-00	s	RES, METAL	180k	1%	1/6W
1-215-477-00	s	RES, METAL	220k	1%	1/6W
1-215-479-00	s	RES, METAL	270k	1%	1/6W
1-215-481-00	s	RES, METAL	330k	1%	1/6W
1-215-483-00	s	RES, METAL	390k	1%	1/6W
1-215-485-00	s	RES, METAL	470k	1%	1/6W
1-215-487-00	s	RES, METAL	560k	1%	1/6W
1-215-489-00	s	RES, METAL	680k	1%	1/6W
1-215-491-00	s	RES, METAL	820k	1%	1/6W
1-215-493-00	s	RES, METAL	1.0M	1%	1/6W

Part No. SP Description

. METAL

1-215-373-31	s	RES, METAL	10	1%	1/6W
1-215-374-00	s	RES, METAL	11	1%	1/6W
1-215-375-00	s	RES, METAL	12	1%	1/6W
1-215-376-00	s	RES, METAL	13	1%	1/6W
1-215-377-00	s	RES, METAL	15	1%	1/6W
1-215-378-00	s	RES, METAL	16	1%	1/6W
1-215-379-00	s	RES, METAL	18	1%	1/6W
1-215-380-00	s	RES, METAL	20	1%	1/6W
1-215-381-00	s	RES, METAL	22	1%	1/6W
1-215-382-00	s	RES, METAL	24	1%	1/6W
1-215-383-00	s	RES, METAL	27	1%	1/6W
1-215-384-00	s	RES, METAL	30	1%	1/6W
1-215-385-00	s	RES, METAL	33	1%	1/6W
1-215-386-00	s	RES, METAL	36	1%	1/6W
1-215-387-00	s	RES, METAL	39	1%	1/6W
1-215-388-00	s	RES, METAL	43	1%	1/6W
1-215-389-00	s	RES, METAL	47	1%	1/6W
1-215-390-00	s	RES, METAL	51	1%	1/6W
1-215-391-00	s	RES, METAL	56	1%	1/6W
1-215-392-00	s	RES, METAL	62	1%	1/6W
1-215-393-00	s	RES, METAL	68	1%	1/6W
1-215-394-00	s	RES, METAL	75	1%	1/6W
1-215-395-00	s	RES, METAL	82	1%	1/6W
1-215-396-00	s	RES, METAL	91	1%	1/6W
1-215-397-00	s	RES, METAL	100	1%	1/6W
1-215-398-00	s	RES, METAL	110	1%	1/6W
1-215-399-00	s	RES, METAL	120	1%	1/6W
1-215-400-00	s	RES, METAL	130	1%	1/6W
1-215-401-00	s	RES, METAL	150	1%	1/6W
1-215-402-00	s	RES, METAL	160	1%	1/6W
1-215-403-00	s	RES, METAL	180	1%	1/6W
1-215-404-00	s	RES, METAL	200	1%	1/6W
1-215-405-00	s	RES, METAL	220	1%	1/6W
1-215-406-00	s	RES, METAL	240	1%	1/6W
1-215-407-00	s	RES, METAL	270	1%	1/6W
1-215-408-00	s	RES, METAL	300	1%	1/6W
1-215-409-00	s	RES, METAL	330	1%	1/6W
1-215-410-00	s	RES, METAL	360	1%	1/6W
1-215-411-00	s	RES, METAL	390	1%	1/6W
1-215-412-00	s	RES, METAL	430	1%	1/6W
1-215-413-00	s	RES, METAL	470	1%	1/6W
1-215-414-00	s	RES, METAL	510	1%	1/6W
1-215-415-00	s	RES, METAL	560	1%	1/6W
1-215-416-00	s	RES, METAL	620	1%	1/6W
1-215-417-00	s	RES, METAL	680	1%	1/6W
1-215-418-00	s	RES, METAL	750	1%	1/6W
1-215-419-00	s	RES, METAL	820	1%	1/6W
1-215-420-00	s	RES, METAL	910	1%	1/6W
1-215-421-00	s	RES, METAL	1.0k	1%	1/6W
1-215-422-00	s	RES, METAL	1.1k	1%	1/6W
1-215-423-00	s	RES, METAL	1.2k	1%	1/6W
1-215-424-00	s	RES, METAL	1.3k	1%	1/6W
1-215-425-00	s	RES, METAL	1.5k	1%	1/6W
1-215-426-00	s	RES, METAL	1.6k	1%	1/6W
1-215-427-00	s	RES, METAL	1.8k	1%	1/6W
1-215-428-00	s	RES, METAL	2.0k	1%	1/6W
1-215-429-00	s	RES, METAL	2.2k	1%	1/6W
1-215-430-00	s	RES, METAL	2.4k	1%	1/6W
1-215-431-00	s	RES, METAL	2.7k	1%	1/6W
1-215-432-00	s	RES, METAL	3.0k	1%	1/6W

Part No.	SP	Description
1-215-433-00	s	RES, METAL 3.3k 1% 1/6W
1-215-434-00	s	RES, METAL 3.6k 1% 1/6W
1-215-435-00	s	RES, METAL 3.9k 1% 1/6W
1-215-436-00	s	RES, METAL 4.3k 1% 1/6W
1-215-437-00	s	RES, METAL 4.7k 1% 1/6W
1-215-438-00	s	RES, METAL 5.1k 1% 1/6W
1-215-439-00	s	RES, METAL 5.6k 1% 1/6W
1-215-440-00	s	RES, METAL 6.2k 1% 1/6W
1-215-441-00	s	RES, METAL 6.8k 1% 1/6W
1-215-442-00	s	RES, METAL 7.5k 1% 1/6W
1-215-443-00	s	RES, METAL 8.2k 1% 1/6W
1-215-444-00	s	RES, METAL 9.1k 1% 1/6W
1-215-445-00	s	RES, METAL 10k 1% 1/6W
1-215-446-00	s	RES, METAL 11k 1% 1/6W
1-215-447-00	s	RES, METAL 12k 1% 1/6W
1-215-448-00	s	RES, METAL 13k 1% 1/6W
1-215-449-00	s	RES, METAL 15k 1% 1/6W
1-215-450-00	s	RES, METAL 16k 1% 1/6W
1-215-451-00	s	RES, METAL 18k 1% 1/6W
1-215-452-00	s	RES, METAL 20k 1% 1/6W
1-215-453-00	s	RES, METAL 22k 1% 1/6W
1-215-454-00	s	RES, METAL 24k 1% 1/6W
1-215-455-00	s	RES, METAL 27k 1% 1/6W
1-215-456-00	s	RES, METAL 30k 1% 1/6W
1-215-457-00	s	RES, METAL 33k 1% 1/6W
1-215-458-00	s	RES, METAL 36k 1% 1/6W
1-215-459-00	s	RES, METAL 39k 1% 1/6W
1-215-460-00	s	RES, METAL 43k 1% 1/6W
1-215-461-00	s	RES, METAL 47k 1% 1/6W
1-215-462-00	s	RES, METAL 51k 1% 1/6W
1-215-463-00	s	RES, METAL 56k 1% 1/6W
1-215-464-00	s	RES, METAL 62k 1% 1/6W
1-215-465-00	s	RES, METAL 68k 1% 1/6W
1-215-466-00	s	RES, METAL 75k 1% 1/6W
1-215-467-00	s	RES, METAL 82k 1% 1/6W
1-215-468-00	s	RES, METAL 91k 1% 1/6W
1-215-469-00	s	RES, METAL 100k 1% 1/6W
1-215-470-00	s	RES, METAL 110k 1% 1/6W
1-215-471-00	s	RES, METAL 120k 1% 1/6W
1-215-472-00	s	RES, METAL 130k 1% 1/6W
1-215-473-00	s	RES, METAL 150k 1% 1/6W
1-215-474-00	s	RES, METAL 160k 1% 1/6W
1-215-475-00	s	RES, METAL 180k 1% 1/6W
1-215-476-00	s	RES, METAL 200k 1% 1/6W
1-215-477-00	s	RES, METAL 220k 1% 1/6W
1-215-478-00	s	RES, METAL 240k 1% 1/6W
1-215-479-00	s	RES, METAL 270k 1% 1/6W
1-215-480-00	s	RES, METAL 300k 1% 1/6W
1-215-481-00	s	RES, METAL 330k 1% 1/6W
1-215-482-00	s	RES, METAL 360k 1% 1/6W
1-215-483-00	s	RES, METAL 390k 1% 1/6W
1-215-484-00	s	RES, METAL 430k 1% 1/6W
1-215-485-00	s	RES, METAL 470k 1% 1/6W
1-215-486-00	s	RES, METAL 510k 1% 1/6W
1-215-487-00	s	RES, METAL 560k 1% 1/6W
1-215-488-00	s	RES, METAL 620k 1% 1/6W
1-215-489-00	s	RES, METAL 680k 1% 1/6W
1-215-490-00	s	RES, METAL 750k 1% 1/6W
1-215-491-00	s	RES, METAL 820k 1% 1/6W
1-215-492-00	s	RES, METAL 910k 1% 1/6W
1-215-493-00	s	RES, METAL 1.0M 1% 1/6W

Ref.No. Parts No. SP Description

TBC-5 BOARD

This board includes the DUS-151 board.

C101	1-161-494-00	s	CERAMIC 0.022 25V
C103	1-161-494-00	s	CERAMIC 0.022 25V
C109	1-161-494-00	s	CERAMIC 0.022 25V
C114	1-161-494-00	s	CERAMIC 0.022 25V
C121	1-161-494-00	s	CERAMIC 0.022 25V
C122	1-161-494-00	s	CERAMIC 0.022 25V
C124	1-161-494-00	s	CERAMIC 0.022 25V
C125	1-131-351-00	s	TANTALUM 4.7 10% 35V
C135	1-161-494-00	s	CERAMIC 0.022 25V
C137	1-161-494-00	s	CERAMIC 0.022 25V
C142	1-161-494-00	s	CERAMIC 0.022 25V
C145	1-161-494-00	s	CERAMIC 0.022 25V
C148	1-161-494-00	s	CERAMIC 0.022 25V
C151	1-161-494-00	s	CERAMIC 0.022 25V
C154	1-161-494-00	s	CERAMIC 0.022 25V
C301	1-124-247-00	s	ELECT 10 20% 25V
C306	1-161-494-00	s	CERAMIC 0.022 25V
C309	1-161-494-00	s	CERAMIC 0.022 25V
C310	1-161-494-00	s	CERAMIC 0.022 25V
C314	1-161-494-00	s	CERAMIC 0.022 25V
C315	1-161-494-00	s	CERAMIC 0.022 25V
C317	1-162-887-11	s	CERAMIC 470PF 5% 50V
C319	1-161-494-00	s	CERAMIC 0.022 25V
C320	1-161-494-00	s	CERAMIC 0.022 25V
C321	1-123-611-00	s	ELECT 1 20% 50V
C322	1-123-611-00	s	ELECT 1 20% 50V
C324	1-161-494-00	s	CERAMIC 0.022 25V
C327	1-161-494-00	s	CERAMIC 0.022 25V
C330	1-161-494-00	s	CERAMIC 0.022 25V
C337	1-130-776-00	s	FILM 0.47 5% 63V
C339	1-161-494-00	s	CERAMIC 0.022 25V
C343	1-161-494-00	s	CERAMIC 0.022 25V
C345	1-161-494-00	s	CERAMIC 0.022 25V
C354	1-161-494-00	s	CERAMIC 0.022 25V
C357	1-161-494-00	s	CERAMIC 0.022 25V
C361	1-161-494-00	s	CERAMIC 0.022 25V
C364	1-161-494-00	s	CERAMIC 0.022 25V
C365	1-161-494-00	s	CERAMIC 0.022 25V
C367	1-161-494-00	s	CERAMIC 0.022 25V
C373	1-162-887-11	s	CERAMIC 470PF 5% 50V
C376	1-161-494-00	s	CERAMIC 0.022 25V
C379	1-161-494-00	s	CERAMIC 0.022 25V
C383	1-161-494-00	s	CERAMIC 0.022 25V
C385	1-161-494-00	s	CERAMIC 0.022 25V
C386	1-130-776-00	s	FILM 0.47 5% 63V
C392	1-161-494-00	s	CERAMIC 0.022 25V
C394	1-161-494-00	s	CERAMIC 0.022 25V
C395	1-161-494-00	s	CERAMIC 0.022 25V
C398	1-161-900-11	s	CERAMIC 1 50V
C402	1-161-485-00	s	CERAMIC 0.1 50V
C403	1-161-485-00	s	CERAMIC 0.1 50V
C404	1-161-485-00	s	CERAMIC 0.1 50V
C405	1-161-485-00	s	CERAMIC 0.1 50V
C406	1-161-485-00	s	CERAMIC 0.1 50V
C407	1-161-485-00	s	CERAMIC 0.1 50V
C408	1-161-485-00	s	CERAMIC 0.1 50V

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List".

Ref.No. Parts No. SP Description

C409 1-161-485-00 s CERAMIC 0.1 50V
 C410 1-161-485-00 s CERAMIC 0.1 50V
 C411 1-161-485-00 s CERAMIC 0.1 50V
 C412 1-161-485-00 s CERAMIC 0.1 50V
 C413 1-161-485-00 s CERAMIC 0.1 50V

C414 1-161-485-00 s CERAMIC 0.1 50V
 C415 1-161-485-00 s CERAMIC 0.1 50V
 C416 1-161-485-00 s CERAMIC 0.1 50V
 C417 1-161-485-00 s CERAMIC 0.1 50V
 C418 1-161-485-00 s CERAMIC 0.1 50V

C419 1-161-485-00 s CERAMIC 0.1 50V
 C420 1-161-485-00 s CERAMIC 0.1 50V
 C421 1-161-485-00 s CERAMIC 0.1 50V
 C501 1-161-897-11 s CERAMIC 0.33 50V
 C506 1-161-494-00 s CERAMIC 0.022 25V

C509 1-161-494-00 s CERAMIC 0.022 25V
 C517 1-161-494-00 s CERAMIC 0.022 25V
 C518 1-161-485-00 s CERAMIC 0.1 50V
 C519 1-124-247-00 s ELECT 10 20% 25V
 C525 1-161-494-00 s CERAMIC 0.022 25V
 C527 1-161-494-00 s CERAMIC 0.022 25V

C540 1-161-494-00 s CERAMIC 0.022 25V
 C541 1-161-494-00 s CERAMIC 0.022 25V
 C543 1-161-494-00 s CERAMIC 0.022 25V
 C547 1-161-494-00 s CERAMIC 0.022 25V
 C549 1-161-494-00 s CERAMIC 0.022 25V

C552 1-161-494-00 s CERAMIC 0.022 25V
 C555 1-161-494-00 s CERAMIC 0.022 25V
 C557 1-162-887-11 s CERAMIC 470PF 5% 50V
 C558 1-161-494-00 s CERAMIC 0.022 25V
 C565 1-127-506-00 s ELECT(SOLID) 1 20% 25V

C569 1-161-494-00 s CERAMIC 0.022 25V
 C570 1-161-494-00 s CERAMIC 0.022 25V
 C571 1-161-494-00 s CERAMIC 0.022 25V
 C572 1-161-494-00 s CERAMIC 0.022 25V

C611 1-161-494-00 s CERAMIC 0.022 25V
 C613 1-124-247-00 s ELECT 10 20% 25V
 C615 1-161-494-00 s CERAMIC 0.022 25V
 C617 1-161-494-00 s CERAMIC 0.022 25V
 C619 1-161-494-00 s CERAMIC 0.022 25V
 C621 1-161-485-00 s CERAMIC 0.1 50V
 C623 1-124-247-00 s ELECT 10 20% 25V

C631 1-161-494-00 s CERAMIC 0.022 25V
 C633 1-123-611-00 s ELECT 1 20% 50V
 C635 1-131-341-00 s TANTALUM 0.1 10% 35V
 C636 1-161-494-00 s CERAMIC 0.022 25V

C639 1-161-494-00 s CERAMIC 0.022 25V
 C643 1-162-885-11 s CERAMIC 330PF 5% 50V
 C656 1-161-494-00 s CERAMIC 0.022 25V
 C658 1-161-494-00 s CERAMIC 0.022 25V
 C702 1-123-611-00 s ELECT 1 20% 25V

C703 1-161-485-00 s CERAMIC 0.1 50V
 C705 1-161-494-00 s CERAMIC 0.022 25V
 C706 1-161-494-00 s CERAMIC 0.022 25V
 C707 1-161-494-00 s CERAMIC 0.022 25V
 C708 1-161-494-00 s CERAMIC 0.022 25V

C710 1-161-494-00 s CERAMIC 0.022 25V
 C714 1-161-494-00 s CERAMIC 0.022 25V
 C716 1-161-494-00 s CERAMIC 0.022 25V
 C720 1-162-888-11 s CERAMIC 560PF 5% 50V
 C721 1-161-494-00 s CERAMIC 0.022 25V

Ref.No. Parts No. SP Description

C722 1-161-494-00 s CERAMIC 0.022 25V
 C724 1-123-611-00 s ELECT 1 20% 50V
 C739 1-161-494-00 s CERAMIC 0.022 25V
 C741 1-161-494-00 s CERAMIC 0.022 25V
 C747 1-161-494-00 s CERAMIC 0.022 25V

C749 1-161-494-00 s CERAMIC 0.022 25V
 C750 1-161-494-00 s CERAMIC 0.022 25V
 C753 1-161-494-00 s CERAMIC 0.022 25V
 C754 1-161-494-00 s CERAMIC 0.022 25V
 C755 1-161-494-00 s CERAMIC 0.022 25V

C756 1-161-494-00 s CERAMIC 0.022 25V
 C757 1-161-494-00 s CERAMIC 0.022 25V
 C762 1-161-494-00 s CERAMIC 0.022 25V
 C764 1-161-494-00 s CERAMIC 0.022 25V
 C766 1-161-494-00 s CERAMIC 0.022 25V

C767 1-161-494-00 s CERAMIC 0.022 25V

CF501 1-567-390-11 s FILTER, CERAMIC

CN105 1-506-747-21 o DIN 64P
 CN106 1-506-747-21 o DIN 64P
 CN401 1-564-494-11 o 60P

CP301 1-231-533-00 s RESISTOR BLOCK 10kx4

D101 8-719-911-19 s 1SS119
 D102 8-719-104-10 s 1SS99
 D103 8-719-104-10 s 1SS99
 D104 8-719-104-10 s 1SS99
 D301 8-719-911-19 s 1SS119

D302 8-719-911-19 s 1SS119
 D303 8-719-109-70 s RD3.9ES-B
 D304 8-719-109-70 s RD3.9ES-B
 D305 8-719-109-79 s RD4.7ES-B
 D306 8-719-915-43 s FC54M

D307 8-719-911-19 s 1SS119
 D308 8-719-915-43 s FC54M
 D309 8-719-911-19 s 1SS119
 D310 8-719-911-19 s 1SS119
 D311 8-719-938-98 s FC51M

D312 8-719-938-98 s FC51M
 D313 8-719-938-98 s FC51M
 D314 8-719-104-10 s 1SS99
 D315 8-719-911-19 s 1SS119
 D316 8-719-911-19 s 1SS119

D317 8-719-109-51 s RD2.0ES-B2
 D318 8-719-104-10 s 1SS99
 D319 8-719-109-51 s RD2.0ES-B2
 D501 8-719-911-19 s 1SS119
 D502 8-719-911-19 s 1SS119

D503 8-719-911-19 s 1SS119
 D504 8-719-911-19 s 1SS119
 D505 8-719-911-19 s 1SS119
 D506 8-719-915-43 s FC54M
 D507 8-719-915-43 s FC54M

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List".

Ref.No.	Parts No.	SP	Description	Ref.No.	Parts No.	SP	Description
D508	8-719-911-19	s	1SS119	IC412	8-759-011-73	s	MCM2016HN55(MOTOROLA)
D509	8-719-911-19	s	1SS119	IC413	8-759-011-73	s	MCM2016HN55(MOTOROLA)
D601	8-719-911-19	s	1SS119	IC414	8-759-942-28	s	CXD1022CQ(SONY)
D602	8-719-911-19	s	1SS119	IC415	8-759-208-76	s	CXD1023AQ(SONY)
D603	8-719-911-19	s	1SS119	IC416	8-759-011-73	s	MCM2016HN55(MOTOROLA)
D604	8-719-911-19	s	1SS119	IC417	8-759-011-73	s	MCM2016HN55(MOTOROLA)
D605	8-719-911-19	s	1SS119	IC501	8-759-990-82	s	TL082CP(TI)
D606	8-719-101-97	s	1SS97-1	IC502	8-759-904-20	s	MB4002(FUJITSU)
D607	8-719-109-87	s	RD5.6ES-B	IC503	8-759-904-20	s	MB4002(FUJITSU)
D608	8-719-109-87	s	RD5.6ES-B	IC504	8-759-202-86	s	TC74HC123P(TOSHIBA)
D701	8-719-911-19	s	1SS119	IC505	8-759-908-39	s	CX-7998(SONY)
D702	8-719-911-19	s	1SS119	IC506	8-759-990-82	s	TL082CP(TI)
D703	8-719-911-19	s	1SS119	IC507	8-759-202-86	s	TC74HC123P(TOSHIBA)
				IC508	8-759-902-21	s	SN74LS221N(TI)
				IC509	8-759-906-01	s	TL601CP(TI)
FL601	1-235-474-11	s	LOW PASS(2.5MHz)	IC510	8-759-918-71	s	CX23065(SONY)
FL602	1-235-469-11	s	LOW PASS(3MHz)	IC511	8-759-207-66	s	CXD1024Q(SONY)
FL701	1-236-051-11	s	LOW PASS(4.5MHz)	IC512	8-759-900-00	s	SN74LS00N(TI)
FL703	1-235-786-11	s	LOW PASS(3MHz)	IC513	8-759-900-04	s	SN74LS04N(TI)
				IC514	8-757-930-11	s	CX-7930A(SONY)
IC101	8-749-901-24	s	BX-1464(SONY)	IC515	8-759-918-35	s	CX20162(SONY)
IC102	8-759-914-44	s	TL431CLPB(TI)	IC516	8-759-990-82	s	TL082CP(TI)
IC103	8-759-990-82	s	TL082CP(TI)	IC517	8-759-938-02	s	MB4001P(FUJITSU)
IC104	8-759-938-43	s	MB40578P(FUJITSU)	IC518	8-759-902-21	s	SN74LS221N(TI)
IC105	8-759-014-96	s	MC1496P(MOTOROLA)	IC519	8-759-918-71	s	CX23065(SONY)
IC106	8-759-900-01	s	SN74LS01N(TI)	IC520	8-759-906-01	s	TL601CP(TI)
IC301	8-759-990-82	s	TL082CP(TI)	IC521	8-759-990-82	s	TL082CP(TI)
IC302	8-759-901-23	s	SN74LS123N(TI)	IC522	8-759-103-93	s	uPC393C(NEC)
IC303	8-759-904-20	s	MB4002(FUJITSU)	IC523	8-759-202-11	s	TC74HC00P(TOSHIBA)
IC304	8-759-990-82	s	TL082CP(TI)	IC524	8-759-202-86	s	TC74HC123P(TOSHIBA)
IC305	8-759-904-20	s	MB4002(FUJITSU)	IC525	8-759-901-63	s	SN74LS163AN(TI)
IC306	8-749-901-21	s	BX-1461(SONY)	IC526	8-759-901-23	s	SN74LS123N(TI)
IC307	8-759-207-65	s	CXD1045Q(SONY)	IC527	8-759-900-00	s	SN74LS00N(TI)
IC308	8-759-902-21	s	SN74LS221N(TI)	IC601	8-749-901-03	s	BX-389L(ROHM)
IC309	8-759-900-00	s	SN74LS00N(TI)	IC602	8-759-200-60	s	TA7060AP(TOSHIBA)
IC310	8-749-901-26	s	BX-381L(ROHM)	IC603	8-759-602-06	s	M5109P(HITSUBISHI)
IC311	8-759-990-82	s	TL082CP(TI)	IC604	8-752-320-32	s	CXL5001P(SONY)
IC312	8-759-901-23	s	SN74LS123N(TI)	IC605	8-759-708-09	s	NJM78L09A(NEC)
IC313	8-759-914-03	s	SN74LS06N(TI)	IC701	8-759-933-52	s	MB40778P(FUJITSU)
IC314	8-759-904-20	s	MB4002(FUJITSU)	IC702	8-759-145-58	s	uPC4558C(NEC)
IC315	8-759-300-25	s	HD10125(HITACHI)	IC703	8-759-902-21	s	SN74LS221N(TI)
IC316	8-759-902-21	s	SN74LS221N(TI)	IC704	8-749-900-77	s	BX-1333L(ROHM)
IC317	8-759-990-82	s	TL082CP(TI)	IC705	8-752-015-81	s	CX20158(SONY)
IC318	8-749-901-22	s	BX-1463(SONY)	IC706	8-749-900-63	s	BX-365AL(ROHM)
IC319	8-759-201-47	s	TA7357AP(TOSHIBA)	IC707	8-749-936-61	s	BX-366A(SONY)
IC320	8-759-001-16	s	MC10116L(MOTOROLA)	IC708	8-749-936-61	s	BX-366A(SONY)
IC321	8-759-902-21	s	SN74LS221N(TI)	IC709	8-759-132-40	s	uPC324C(NEC)
IC401	8-759-007-10	s	MC74HC541N(MOTOROLA)	IC710	8-759-145-58	s	uPC4558C(NEC)
IC402	8-759-900-00	s	SN74LS00N(TI)	IC711	8-741-145-50	s	BX-1455(SONY)
IC403	8-759-933-49	s	CXD1021Q(SONY)	IC712	8-759-914-44	s	TL431CLPB(TI)
IC404	8-759-933-51	s	CXD1020Q(SONY)	IC713	8-759-170-05	s	uPC78M05H(NEC)
IC405	8-759-011-73	s	MCM2016HN55(MOTOROLA)	IC714	8-759-105-38	s	uPC79M05H(NEC)
IC406	8-759-011-73	s	MCM2016HN55(MOTOROLA)				
IC407	8-759-011-73	s	MCM2016HN55(MOTOROLA)				
IC408	8-759-011-73	s	MCM2016HN55(MOTOROLA)				
IC409	8-759-007-10	s	MC74HC541N(MOTOROLA)	L101	1-410-470-11	s	MICRO 10
IC410	8-759-900-04	s	SN74LS04N(TI)	L102	1-410-470-11	s	MICRO 10
IC411	8-759-933-51	s	CXD1020Q(SONY)	L103	1-410-468-11	s	MICRO 6.8
				L104	1-410-470-11	s	MICRO 10
				L105	1-410-470-11	s	MICRO 10

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List".

Ref.No. Parts No. SP Description

L106 1-410-470-11 s MICRO 10
L107 1-410-470-11 s MICRO 10
L108 1-410-470-11 s MICRO 10
L111 1-410-470-11 s MICRO 10
L112 1-410-470-11 s MICRO 10

L113 1-421-329-00 s CHOKE 10
L114 1-421-329-00 s CHOKE 10
L115 1-421-329-00 s CHOKE 10
L116 1-421-329-00 s CHOKE 10
L117 1-421-329-00 s CHOKE 10

L301 1-410-470-11 s MICRO 10
L306 1-408-763-00 s MICRO 0.82
L501 1-410-482-31 s MICRO 100
L502 1-410-470-11 s MICRO 10
L503 1-410-470-11 s MICRO 10

L505 1-410-470-11 s MICRO 10
L506 1-410-470-11 s MICRO 10
L507 1-410-470-11 s MICRO 10
L508 1-410-470-11 s MICRO 10
L509 1-410-470-11 s MICRO 10

L511 1-410-470-11 s MICRO 10
L512 1-410-470-11 s MICRO 10
L601 1-410-470-11 s MICRO 10
L602 1-410-470-11 s MICRO 10
L605 1-410-470-11 s MICRO 10

L606 1-410-470-11 s MICRO 10
L607 1-410-470-11 s MICRO 10
L608 1-410-470-11 s MICRO 10
L611 1-410-470-11 s MICRO 10
L612 1-410-470-11 s MICRO 10

L701 1-410-470-11 s MICRO 10
L702 1-410-470-11 s MICRO 10
L703 1-410-470-11 s MICRO 10
L704 1-410-470-11 s MICRO 10
L706 1-410-470-11 s MICRO 10

L709 1-410-470-11 s MICRO 10
L710 1-410-470-11 s MICRO 10
L711 1-410-470-11 s MICRO 10
L712 1-410-470-11 s MICRO 10

LV301 1-408-634-00 s FIXED 10.7
LV302 1-410-286-11 s VAR, 1.0
LV303 1-410-291-11 s VAR, 1.2
LV501 1-410-287-11 s VAR, 2.2
LV502 1-410-287-11 s VAR, 2.2
LV701 1-408-533-00 s VAR, COIL

Q101 8-729-611-53 s 2SA1115-F
Q102 8-729-201-52 s 2SA1015
Q103 8-729-281-52 s 2SC1815-Y
Q104 8-729-178-54 s 2SC2785
Q105 8-729-178-54 s 2SC2785

Q106 8-729-178-54 s 2SC2785
Q301 8-729-178-54 s 2SC2785
Q302 8-729-384-46 s 2SA844-C
Q303 8-729-190-12 s 2SC2901
Q304 8-729-611-53 s 2SA1115-F

Ref.No. Parts No. SP Description

Q305 8-729-178-54 s 2SC2785
Q306 8-729-178-54 s 2SC2785
Q307 8-729-178-54 s 2SC2785
Q501 8-729-105-71 s 2SK523-K2
Q502 8-729-105-71 s 2SK523-K2

Q503 8-729-178-54 s 2SC2785
Q504 8-729-178-54 s 2SC2785
Q505 8-729-178-54 s 2SC2785
Q506 8-729-178-54 s 2SC2785
Q507 8-729-178-54 s 2SC2785

Q508 8-729-178-54 s 2SC2785
Q509 8-729-178-54 s 2SC2785
Q510 8-729-178-54 s 2SC2785
Q511 8-729-384-46 s 2SA844-C
Q512 8-729-190-12 s 2SC2901

Q513 8-729-178-54 s 2SC2785
Q514 8-729-178-54 s 2SC2785
Q515 8-729-178-54 s 2SC2785
Q516 8-729-105-71 s 2SK523-K2
Q517 8-729-178-54 s 2SC2785

Q518 8-729-611-53 s 2SA1115-F
Q601 8-729-178-54 s 2SC2785
Q602 8-729-611-53 s 2SA1115-F
Q603 8-729-611-53 s 2SA1115-F
Q604 8-729-178-54 s 2SC2785

Q605 8-729-178-54 s 2SC2785
Q606 8-729-178-54 s 2SC2785
Q607 8-729-611-53 s 2SA1115-F
Q608 8-729-178-54 s 2SC2785
Q609 8-729-611-53 s 2SA1115-F

Q610 8-729-178-63 s 2SC2786-K
Q611 8-729-178-63 s 2SC2786-K
Q612 8-729-178-63 s 2SC2786-K
Q613 8-729-178-54 s 2SC2785
Q614 8-729-178-54 s 2SC2785

Q615 8-729-178-54 s 2SC2785
Q616 8-729-178-54 s 2SC2785
Q617 8-729-178-54 s 2SC2785
Q618 8-729-178-54 s 2SC2785
Q619 8-729-178-54 s 2SC2785

Q620 8-729-178-54 s 2SC2785
Q621 8-729-178-54 s 2SC2785
Q622 8-729-611-53 s 2SA1115-F
Q623 8-729-178-54 s 2SC2785
Q624 8-729-178-54 s 2SC2785

Q625 8-729-611-53 s 2SA1115-F
Q626 8-729-178-54 s 2SC2785
Q627 8-729-178-54 s 2SC2785
Q628 8-729-178-54 s 2SC2785
Q701 8-729-178-54 s 2SC2785

Q702 8-729-611-53 s 2SA1115-F
Q704 8-729-178-54 s 2SC2785
Q705 8-729-178-54 s 2SC2785
Q706 8-729-611-53 s 2SA1115-F
Q707 8-729-177-33 s 2SD773-4

Parts that are not listed in the "reference numbers order list"
are shown in the "General Purpose Electrical Parts List".

8-3. PACKING MATERIAL (SUPPLIED)

Ref.No. Parts No. SP Description

R318 1-249-442-11 s CARBON 510 5% 1/6W
 R363 1-247-881-00 s CARBON 120k 5% 1/6W
 R379 1-247-895-00 s CARBON 470k 5% 1/6W
 R722 1-247-734-11 s CARBON 39 5% 1/2W
 R723 1-247-734-11 s CARBON 39 5% 1/2W
 R783 1-249-404-00 s CARBON 82 5% 1/6W

Parts No. SP Description

2-122-383-01 o SPACER
 2-122-384-01 o CUSHION
 2-126-156-01 o INDIVIDUAL CARTON
 2-124-614-01 o PAD

RV101 1-230-520-11 s VAR, METAL GLAZE 1k
 RV102 1-230-521-11 s VAR, METAL GLAZE 2.2k
 RV103 1-230-519-11 s VAR, METAL GLAZE 470
 RV104 1-230-524-11 s VAR, METAL GLAZE 22k
 RV301 1-230-519-11 s VAR, METAL GLAZE 470

RV302 1-230-521-11 s VAR, METAL GLAZE 2.2k
 RV303 1-230-521-11 s VAR, METAL GLAZE 2.2k
 RV501 1-230-522-11 s VAR, METAL GLAZE 4.7k
 RV503 1-230-520-11 s VAR, METAL GLAZE 1k
 RV504 1-230-523-11 s VAR, METAL GLAZE 10k

RV601 1-228-452-00 s VAR, CERMET 50
 RV602 1-230-520-11 s VAR, METAL GLAZE 1k
 RV603 1-230-523-11 s VAR, METAL GLAZE 10k
 RV604 1-230-522-11 s VAR, METAL GLAZE 4700

RV605 1-230-520-11 s VAR, METAL GLAZE 1k
 RV606 1-230-520-11 s VAR, METAL GLAZE 1k
 RV701 1-230-520-11 s VAR, METAL GLAZE 1k
 RV703 1-230-522-11 s VAR, METAL GLAZE 4.7k
 RV704 1-230-522-11 s VAR, METAL GLAZE 4.7k

RV705 1-230-523-11 s VAR, METAL GLAZE 10k
 RV708 1-230-519-11 s VAR, METAL GLAZE 470

S301 1-553-563-00 s ROTARY "VIDEO PHASE"
 S402 1-553-977-00 s SLIDE "SYNC 8H"
 S502 1-553-977-00 s SLIDE "V-BL SELECT" (J ONLY)
 S503 1-516-924-21 s DIP "V-BL SELECT"
 S504 1-516-924-21 s DIP "V-BL SELECT"

S601 1-553-977-00 s SLIDE "2FC BEAT CANCEL"
 S701 1-553-977-00 s SLIDE "SET UP"

X501 1-527-227-00 s CRYSTAL 14.31818MHz
 X502 1-527-227-00 s CRYSTAL 14.31818MHz

DUS-151 BOARD

All of the component parts on the DUS-151 board are supplied together when you order BKU-901A.

CN401 1-562-485-11 o 60P

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List".

